THE HORTICULTURIST

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Special Contributions.

Rambling Notes.

By JOHN JAY SMITH, formerly Editor of the HORTICULTURIST.

MR. EDITOR: You suggest very properly that the thirtieth year of the HORTICULTURIST is a suitable period for recollecting what have been the triumphs accomplished by its advent and since its publication. I knew Mr. Downing intimately, and, with others, hailed with great pleasure his first number. We then had no guide in landscape adornment, or that culture which renders a home in the country one of enjoyment and expansion. Happily, our friend was the right man in the right place, and fortunately he wielded a most attractive pen which brought us all to his feet. A few rambling notes which follow, may be suitable at this time to recall the periodical's early history.

To his many other qualifications for leading the public taste, Mr. Downing added a suavity and kindness of heart and manner which greatly endeared him to his friends. The experiment was a bold one, and was hailed with enthusiasm from all lovers of rural art. He had many difficulties to contend against, the greatest being the indifference or neglect of those who knew no better, and who were slow to appreciate; but his public grew as he unfolded his practical knowledge and combined his information with tasteful remarks. Many is the home which now benefits by his teaching. All who knew the North river well, recognize numerous instances where the trees of his planting, his grouping, and his architectural hints brought out an amount of beauty hitherto unthought of. It is to be regretted that when his memory was fresh, some one had not collected and published his correspondence. I possess some fifty of his letters, all marked by his gentlemanly and graceful pen, and each containing evidences of his high culture. He had a fine appreciation of music, and seemed in other things and arts to possess an intuitive knowledge of every thing beautiful. His character received a truthful estimate from his friend Curtis; strong as were the commendations bestowed,

they are all truthful, and fortunately these are preserved in the pages of his work printed soon after his melancholy death by drowning, when saving others.

Perhaps one of his brightest laurels was the fact that he stirred up the New York community to institute and carry to success the Central Park. He first suggested it, and by his writing and enthusiasm set his admirers to work, advising and planning *con amore*. Fortunate was it that a successor of so much taste and talent as Mr. Vaux was found able to continue and extend Downing's views.

After his death the periodical was edited for a few years by Mr. P. Barry, of Rochester, with success. It was then thought best to bring it to Philadelphia; the editorship was offered to me, then in ill health; I may as well tell it now, I took the post more to learn than to teach—quite an unwarrantable experiment. It resulted in a large correspondence with very many enthusiastic improvers, and in lasting friendships which have added vastly to my enjoyments of a long life—friendships that must not die.

As this is a rambling paper, it shall tell a little of the behind-the-scenes of the formation of the next great effort to make a Park, and that in Philadelphia, because the work now in your hands had something rather important to do with this. The story has been told before by others, else I should very properly avoid it; but history is history, and I shall be excused for the egotism of the relation in this place; it shall be briefly related.

Three gentlemen of public spirit, to use a common phrase, got park upon the brain; their names, Browne, lately deceased, Castle and Keyser, all occupying law offices which I had to rent, and consequently we were thrown sometimes in contact. Busy, and unwell in my chamber, these gentlemen, in despair of making an impression in the public mind, engaged an old hack and came to ask encouragement from the editor of the HORTICULTURIST, through which Mr. Downing had sounded the first note for New York. They proposed a visit to the few acres they had set their hearts upon, and detailed the important arguments that had been in vogue without effect, such as preserving the purity of our drinking water, etc. I assured them I knew the ground from my youth, and the arguments were sound and unanswerable; that to get the public ear it was necessary to hold a "public" meeting! Acting on the idea, I was placed in the Chair, Mr. Keyser was appointed Secretary, and the other two lawyers made, I must say, very effective speeches. Resolutions, very appropriate to the occasion, were passed, and we adjourned to the Historical Society's rooms, for a subsequent day. To this meeting the public was invited; but very few, indeed, came, and our courage was at a low ebb. A committee consisting of the four original members was appointed. We traversed the whole city in the slush and snow of 1857, and received the enormous subscription of eighty-two thousand dollars, twenty of which came from the public spirited and liberal Messrs. Cope. The price of the bit of land which it was then our sole ambition to purchase was one hundred and twenty-five thousand dollars; we could get but two-thirds of the amount; people did not like to put their hands into their own pockets. At this stage the brilliant idea was suggested to purchase the proposed property, for which we had the refusal, and give it to the city under a mortgage of, say, forty-five thousand. But such an outlay was then considered reprehensible; we had to solicit councilmen and count noses, *pro* and *con*, for months before a vote was reached accepting our donation! And now, observe the contract; a law was passed giving the judges of our courts the appointment of park commissioners; they appointed lawyers with no acquaintance with the subject; the result all now deplore; land by hundreds of acres was purchased, but there was too little knowledge of what makes a Park, and we are now left in the lurch; our debt is so large that councilmen are afraid to add more, and there is no plan to raise money for improvements. The once much praised commissioners are no longer be-puffed, and we are at a stand still.

There is something due to historical accu-

racy, and to the credit of the HORTICULTURIST, in this costly "improvement."

When Laurel Hill Cemetery was commenced, and I was devoting most of my time and energy to make an example, soon so generally followed, Mr. Downing was much interested in this subject, predicting, what has come to pass, that the planting and adornment of the Rural Cemetery would lead public taste to create the public grounds called parks, and he wrote several articles in furtherance of my views, while his private letters were full of enthusiasm on this new movement, one very little understood in Europe, where the attempts to form rural cemeteries are mere caricatures of the American plan. Efforts are now making to introduce our better system abroad.

I promised a rambling paper; let us cross the mountains to view the advance in cultivation since the advent of the HORTICULTURIST under Downing.

When one reads of the progress of the California regions of this great country, the mind is lost in contemplating its future destiny and greatness. For one thing, what a wealth is contained in the wine trade of our successors! The writer, in 1857, was staying at the best hotel at Natchez—alas! how poor it was! when a prominent lawyer of the place was ushered into my apartment, who asked if I could translate Spanish. He had a deed of a large property to prepare, the original was in the language of old Spain, and there was no person in the neighborhood who could translate its metes and boundaries! And yet Natchez had been largely settled by Spaniards; now every vestige of the nation, except its old parchments, is gone. So it is and is to be in California. The lazy Iberians never found the gold mines of such priceless value; they knew not Yosemite or the Big trees. Satisfied with little more than the climate produced, they yet had the traditions of the Old World, and the priest knew that good wine cheered the heart. By incredible exertions a few wine bearing trees found their way to the region, and now examples exist, one especially, of the wonders of the climate and the adaptability for wine culture, the future of which it is pleasant to look upon. Already we hear of great crops of raisins; the almond and the orange flourish equally well as in Cuba and other tropical climates. What may we not expect our successors will do in the wine trade? Prince Metternich, with the product of his Schloss Johannisberg will be only remembered as a tradition. That estate contains 325 acres, and is not solely devoted to the vine. Its highest production has been stated at sixty thousand dollars. We shall have vineyards in this country that will yield ten times as much and wine equally good. It is well to remember that all accounts agree in stating that phosphate of saltpetre is largely employed to restore the wood and fruit of the vine in the loose sandy soil, the component parts of which have been exhausted. It was the good fortune of the writer to be domesticated for a short period at the American Legation in Brussels; next door lived the late Prince Metternich, and great kindness and civility was shown to our ambassador, Mr. Clemson, in the way of gold sealed Johannisberg. It was good, and how can one depreciate what by consent of all the (drinking) world is declared the very best; yet, I confess, I prefer a glass of our good old Madeira, ripened in the South, and set before knowing amateurs.

It would be improper not to notice the fact that vines at this famous Schloss are planted less than three feet apart, in rows distant four feet from each other, and directly facing the sun, which is arrived at by the shadow cast by a pole stuck into the ground exactly at noon. A female Metternich now manages the estate; she bears the reputation of a remarkably keen woman of business, and will sell you gladly wine from 50 cents a bottle up to eight and ten dollars. The great advantage this wine possesses was discovered by pure accident as long as a century ago, when the Bishop of Fulda forgot to send the customary order for the vintage, and in consequence the grapes became shrivelled and even rotten before they were gathered; the wine then made was of surpassing excellence, and ever after the late vintage is reported to have become the rule—a hint to be remembered.

The formation of horticultural societies has been another effect of the establishment of Downing's periodical, but there are not half enough. Each rural neighborhood should have its association for floral exhibitions, and the success which comes from rivalry. No matter how small the population of a district, a union of effort will produce wonders. Gradually a taste will be infused; mental cultivation surely follows. Even the poor Spitalfield weavers have their competing exhibitions, premiums, and so forth.

The object of such societies should be to diffuse information. We may as well at once tell the progressive gardener that he can *never* come up to the requirements of his profession unless he is grounded in botany. The profession is one of science; we should never have had the accomplished Holland or English importers of new plants, unless they had been botanists. Send a man to collect new plants to Japan, China or South America, destitute of a knowledge of botany, and he would inevitably fail. The observer of the transit of Venus must be an astronomer, and just so it is that an accomplished gardener must not only have the practical knowledge that comes by observation, but he must know the why and wherefore, else will much of his time be thrown away. What would Kew gardens have been as a great example had Sir Wm. Hooker been a tyro in science? What would Douglas and others have done for their country as explorers, had they been only routine gardeners? The plasterer when he mixes his lime and his sand, knows from experience that a certain result will occur when he adds water to the mixture and stirs it carefully; he proceeds in his routine, which any laborer can imitate and perfect. His knowledge aspires to nothing higher. But suppose that he had the problem to solve that by certain combinations of metallic compounds he could exhibit to his employers the tints of the rainbow! that he could from the results of his studies depict the beauties of the heavens on your ceilings—show the principal stars in their relative positions, and so forth—would not such a plasterer have more business than he could accommodate? With the gardener, everything he knows he can turn to account, and transform the Winter scene into sunshine. It requires study and knowledge to conquer climate. An ignorant gardener, for instance, could not do much without trial and experience, unless he had conquered the difficulties of making a perfect Winter Rose house. He would first encounter his want of knowledge as to fertilizers, and through a long catalogue, including the exact temperature and the barometrical requisites, would come to the ever-recurring slug. He would fight his difficulties manfully and probably finally conquer, but had he previously educated himself his difficulties would, at all events, have been greatly less. He should have read of the experiences of others; combining these with his science, he would at once succeed, and have the pleasure, as one of our valued friends had the past Winter, of introducing his visitor to a perfect garden of roses, shielded from the snow, in glorious abundance; and let me add that he cuts grand and profitable bouquets twice every day of the queen of flowers, from Marshal Niel, running rampant in its glory, to the humbler, but not to be despised, Daily China. Let science and what others have learned, be more studied.

It may here be remarked that the advance in culture and civilization demands an American academy of horticulture. The erection of a Centennial building for the exhibition of our advances in conservatory culture now calls for a school for the education of learners and future professors of the art. It is most true that the successful horticulturists who have the control of our markets for plants are foreigners, a most useful class; it took and is still taking great efforts to give woman her proper occupation; equally true is it that obstacles easily overcome are keeping Americans from professing the art of gardening. In mercantile pursuits we have had the example of a Girard; one or more great successes stimulate our youths to attempt a similar career. Now, we have in Ellwanger and Barry, of Rochester, an example of what may be done in the way of great success by applying business habits with science, while in the West similar results

have followed careful beginnings. The successful cultivators of plants and trees in America have mostly emanated from the Government gardens of Great Britain, such as Kew and the botanical gardens of Edinburg and Dublin, etc. If we had a little government patronage, such as has been begun under that intelligent director, Wm. Saunders, at Washington, enthusiastic lovers of the art would be created among us. I ask if it is not now a good opportunity to create a great college of horticulture, taking the great conservatory erecting for the Centennial exhibition, which is to be a permanent structure? There is money in the business; governments, State and national, can do no greater service to our country than to inaugurate a college of horticulture. Agriculture has received very great encouragement and has profited thereby; why should our art be so entirely ignored in public appropriations? The beginning at Washington should be imitated in every State. There are industries in the line of the educated cultivator not yet developed. For instance, within a few years we have seen the bouquet business, the tuberose sales, monstrously increased; a cultivator on Long Island is said to have sold ——— for one hundred dollars a day. *Now* there are thousands of dollars lying in the New York streets and the streets of other cities, who will send round little baskets of perfect mushrooms to costumers. Every gardener will tell you he knows how to raise them, but it requires an *exact* hygrometrical and barometrical combination of facts and heat to accomplish the feat; with these Mr. Robinson, of London, has told us in his little book on the subject. We can readily raise them "*in an old shoe.*" Look to this, some seeker after a fortune; it offers a resource one hundred times greater than the cultivation of the Black Hamburgh, or even the rose and tuberose.

A 160 pound squash is one of the Calhoun Co., Mich., productions, and a squash vine at Charlotte, Mich., grew 820 feet of vine, and squashes weighing 207 pounds.

The Greenhouse.

Greenhouse for May.

WE may now expect the weather to become much warmer both day and night, so that fires may soon be dispensed with in cool houses without danger from sudden frost, but it frequently occurs that we have some cold storms at the beginning of the month, causing brisk fires to be necessary in warm houses; if this is not attended to, plants often get a serious check, for it must be remembered that plants indoors generally are more tender and less able to bear sudden changes of temperature than they are at the end of the season when growth is firmer and more mature; many plants which will stand full exposure outside later in the season are now quite tender if grown in a warm, close house. This is one reason why those plants required for outside planting should be gradually hardened, and by degrees exposed to full air previous to turning them outside; they will then grow on without any check, but if turned out at once from a close confined atmosphere, it will be some time before a satisfactory growth commences, and if the plants are small, many will die outright; in either case causing loss of time and making the planting patchey and uneven.

Do not be in too much haste to turn delicate plants outside; the last two years we have had quite cold nights as late as the third week in May. We frequently see Egg plants planted when a few hot days come in this month, and these plants are often a week or two later in fruit than those turned out several days later; the first plants being exposed to a few cool nights and, perhaps, a cold storm, have their best leaves destroyed and the plants much injured. It is not safe to plant out such plants as Coleus and Amaranthus before it is fit to plant Egg plant; but even in the North, Verbena should be planted early in the month, to become established before the very hot weather commences. We usually plant ours out about the 20th of April, with the best

results, but the plants are grown in a house from which the frost is only just excluded; so that the growth is short-jointed and not delicate. Carnations and Chrysanthemums for next winter flowering should be planted out about the same time; any half hardy shrubs which have been stored away in sheds and cellars must be planted at once before they commence to grow, or a weak, spindling growth, with deformed foliage, will result. The last winter will be a good test of which plants are thoroughly hardy, and those which only stand out in ordinary winters. We hear that Pampas grass is killed as far south as Washington, D. C.; and the Arundo donax is also killed both in damp and dry situations; this plant is generally considered perfectly hardy. These plants should be examined at once, and if dead or much punished must be removed, and replaced with others; if not, there will be blanks in some of the most prominent places. In some cases it may be advisable to fill, with temporary plants, such as large Dracænas, Cannas, Castor oil plants, Aralias, or other large plants easily obtained. The Eulalia japonica is a first rate addition to our list of grasses with variegated foliage; it is very graceful and perfectly hardy. It is well to start old Dahlias and Cannas on a slight hot-bed, if room has been too scarce to pot them earlier. If dry roots are planted, there is sure to be a few blanks caused by some plants not starting to grow; this is prevented by starting before planting. Camellias, with the exception of a few late flowers, or Candidissima will be now out of bloom and growing fast; shade from bright sun, give plenty of water to the roots and wash the foliage well with hose or syringe; look out for black aphides, which are sometimes troublesome on young growth, fumigate on first appearance, or what is better, give a slight smoke with tobacco occasionally as a preventive. We would advise our readers to procure a good plant or two of Candidissima, if they have not grown this variety; it is one of the best double white varieties, and is in full beauty when other sorts have finished blooming. The flowers do not drop as quick as other varieties. Late in the season the old double white flowers fall when touched nearly as soon as fully open. We find this sort very useful for Easter flowers; when others are over we have plenty of flowers.

Agaves and Yuccas must be kept as cool as possible to prevent early growth before planting or plunging out of doors for the summer. If allowed to grow much, the young leaves become broken and twisted by the wind, and the beauty of the plant is permanently injured. These plants will now require more water; give a good soaking when required.

Pelargoniums should now be in full flower, and will require shade from bright sun, and also ventilation day and night; if shut close the flowers drop away very quickly, and also if cut and packed in a close box; give some weak liquid manure frequently; see the plants do not suffer from want of water at any time; it being necessary to secure a good bloom, to have the pots well filled with roots; the plants become dry in a very short time, causing the flowers to come small and the foliage to turn yellow and fall off.

Fuchsias should be also in flower now or the hot weather will prevent the plants doing much good; give plenty of water, and shade from bright sun.

Gloxinias.—The early plants will now commence to flower, and the later ones be in full growth. If large plants are required give a larger pot as soon as those they are now growing in is well filled with roots; do not water over flower or foliage. A rather close, moist, hot atmosphere is most suitable to these plants.

Achimenes.—Fill baskets with these plants and give same treatment as Gloxinias until established, after which these plants will stand more light to secure a free bloom.

Caladiums will now be grown freely, and if large specimens are required, must have large pots and abundance of water; a slight shade is necessary or the colors will be dull; but these plants if grown in a moist atmosphere require less shade than most other fine foliage plants; in fact, some of the best colored

and largest leaves we ever saw were grown without any shade in a very light Victoria house, in which the air was loaded with vapor from the hot water in the tanks in which the Victoria and other aquatic plants were grown. We hope the aquatic house proposed among the other erections at the Centennial at Philadelphia will be planned with judgment, for it would be one of the most attractive parts of the horticultural department, as there is nothing of the sort in this country.

Eucharis will now require abundance of water both to the roots and over foliage, if plenty of flowers are desired. We still hear complaints of people not being able to flower these plants, which we cannot understand, it being the freest of all plants to bloom, and may be obtained in full flower at any season of the year; we have them in flower all the year round. They are especially useful at Christmas and Easter, especially when, like this year, Easter is early, it is difficult to obtain white Lilies in flower in time, and Camellias are getting scarce, for although Calla Lilies are good for church decoration, they are too stiff and upright for elegant decoration, and also rather common.

Orchids.—These plants will be rooting and growing freely, and will now require much more water with abundance of moisture in the air; this can be given by watering the sand both above and below stages several times in the day, and also by a good syringing overhead each afternoon. Such plants as Ærides, Candas and Phalænopsis will stand a temperature from 90 to 100 degrees sun heat, with a day temperature of 80 deg. fire heat; ventilate freely, especially to the house containing Lycaster and Odontoglossums, shade from bright sun, and be careful in watering not to let the water into young growth—it will rot the hearts from young shoots. Cattleya mossiæ will now be in flower; of these there are many varieties which makes a number of plants of this species very interesting. Dendrobium fimbriatum will also be in flower; this is very handsome when well grown; Dendrobium albo sanguineum, will also be in flower; this is a splendid species which grows most satisfactory on a block. The early blooming Dendrobiums will be now making a free growth and will require extra heat and moisture; any of the late plants of these requiring potting or surfacing should be attended to at once. We may mention that Dendrobium, crassanode and infundibulum are splendid novelties; the flowers will last in perfection for three months on both species, the former in white tipped with delicate rose with an orange eye, and the latter in very large pure white with orange eye; the first flower on this opened the first week in January, and is still good in April, with other buds opening. These species should be in every collection; they are, like other rare plants, rather high-priced. Cypripedium Rælzii will as usual be in flower, with caudatum. and barbatum in variety. Oncidium ampliatum majors, Quaidum and sphacelatum will also be in flower; also the sweet flowering Ornithorhyncon, with the sweet-scented Lycaste cruenta and aromatica; Epidendrum macrochilum in variety will be also in flower last month and this, and the pretty little Aromaticum and the bright orange Vitellinum; many of these species will be grown on blocks and will require frequent syringing to keep them moist. Phaius grandifolium will now require shaking out from the old soil, and all the dead roots and leaves to be cut away, and repotted in fresh soil, consisting of two parts good loam, one part well decayed manure and one part rough peat, with sufficient clean sharp sand to keep it open; see there is no scale on the plants when potted; if the vestita section of Calanthes have not been repotted they should be attended to at once; the same mixture of soil recommended for Phaius will grow these plants well; but it is well to give rather more drainage to these than is necessary for Phaius. Schomburgkias will now have started young shoots; it is a good time to give larger pots if necessary; these plants require abundance of water when growing or the growth is not strong enough to flower. Peristeria elata should be now showing flower, and will require abundance of water if strong flower stems and abundance of flowers are expected; we obtain

flower stems with from 30 to 40 flowers each, and the stems *six feet in heighi*.

Poinsettia pulcherrima and Euphorbia jacquinæflora, if not cut down should be done at once; any which were cut down early, and the shoots have already started, must be shaken out and repotted in smaller pots, placed in a moderate close house for a time, and removed to a light and airy position in a few weeks, previous to standing out of doors; but little water must be given to the roots until they have started freely.

Ferns and Lycopodiums.—These plants will be now growing freely; some plants required to make specimens will soon require larger pots; this should be done before they get much pot-bound; large plants which cannot have larger pots will require abundance of water to keep a moist atmosphere, and do not admit drying draughts of wind directly on the plants; shade from direct rays of the sun and keep a sharp look-out for insects. Such varieties as Adiantum farleyense require more heat than the Australian and other varieties from temperate climates, and cold or dry cutting winds are ruin to the beautiful foliage; flowering ferns must be placed in a close, moist place and frequently syringed over the foliage, and *never have* any sun.

Palms are now growing very fast, and will require abundance of water at the roots and good syringing over the foliage every bright day; many species form their principal mass of roots at the bottom of the tubs and pots; care must be used that these roots do not get dry while the top soil is moist enough; some species are best standing in pans of water during the hot weather, but they should be allowed to absorb all the water before more is added, or the water becomes stagnant and putrid and decays the roots.

Alocasiæ will now require larger pots; good peat and spagnum moss is best for these plants, with the exception of Macrorhiza variegata and the esculentum varieties, which grow best in a good loam and manure; all these plants require abundance of water when growing, for this reason drainage should be good.

Anthurium Scherzerianum will now be in full beauty; this plant being of the easiest cultivation and lasting in flower for three months, should be cultivated by every one having a warm greenhouse; the flowers get larger each year as the plant becomes stronger; for this reason the beauty of the plant cannot be fairly judged by small plants. We notice an illustration of this plant in a recent number of the Scientific American, which, although not colored, gives a fair idea of the beauty of large plants.

Azaleas, with the exception of late plants, will be now out of flower and making their growth freely; these plants do best in moderate sunshine, but it is a mistaken idea to turn the plants out of doors in full sun to set their buds—they do it much better inside; there is no objection, if short of room in the greenhouse, to turn them out after the buds are set, if the plants are well attended to with water, but do not plunge the pots in a border unless provision is made to prevent worms from entering, or the soil will be so sour that the plants will do little good; keep young plants and choice varieties which are required to form specimens quickly in a warm house and give plenty of moisture—a second growth may thus be obtained in one season; those plants requiring larger pots should be potted at once to obtain pots well filled with roots before winter; look out for thrip and prevent its spreading; see that soil is moist round the roots before potting.

Bouvardias.—The winter-flowering Bouvardias are especially valuable as pot plants for decorative purposes, and also for bouquet making. At Ascot (we learn from the *Florist*), Mr. Standish grows them in very large numbers. Two houses, eighty feet long, are filled with them. In the one house the free-flowering B. Vreelandii, B. Jasminiflora and B. Humboldtii corymbiflora are grown. Taking it altogether, this last is no doubt the finest variety in cultivation. It is an excellent grower, deliciously scented, and a continuous bloomer. The flowers are as large as those of the old Humboldtii, and produced in bunches of a dozen. The individual blooms are three

inches long in the tube; they are used singly, to stand above and relieve the even surface of bouquets, and for this purpose a thin wire is pushed up the inside of the tube, and the stalk of the flower fastened to it. This is to keep them in position, and to prevent their falling over. In this house over 2,000 plants in fine health are grown. They are kept near the glass, and moderate stove heat used all through the winter, without which they do not bloom freely. The adjoining house, also filled with Bouvardias, contains many of the American pink variety, named Bride. The above four sorts are the best in cultivation, and where fragrant flowers are continuously in demand, they are indispensable.

The Chimney Campanula.—To grow a good specimen of this fine old plant, a writer in the *Gardeners' Magazine* recommends the seed to be sown in March, and gets the plants on well during the following summer. It is not at all tender, but a cold frame is a good place for it during the winter. In the following spring turn the plants out of the pots into the open ground, which should be of a sandy nature, consisting of peat, leaf-mould, maiden loam, sand, etc. Insert the plants in the soil one foot six inches apart. During the summer keep them well supplied with water. In the autumn lift the plants carefully, and pot them in the same kind of soil, using nine or eleven inch pots. Give a good soaking with water, and put them in the cold frame for the second winter. Early in the following spring commence to water them with moderate liquid manure once a week, and give them abundance of clean water between. In May or so, you will most probably observe the flower-spikes rising, and if they have been well supplied with water, some six or eight spikes that will attain to six or seven feet, will be developed, and a specimen three feet through will probably be the result, producing an effect that will throw many of our new plants in the shade. There is no plant better suited for cottage exhibitions, etc., than this.

Handsome Foliage Plants.—One of the most striking in appearance of the many types of fine foliage plants to be seen (says the *Gardeners' Chronicle*), in the large show conservatory attached to the residence of Mr. John Wills, Onslow Crescent, South Kensington, is Aralia fastigiata It is a very elegant and handsome plant, with bold compound leaves, each of which had from six to eight petiolate leaflets, somewhat oblong in shape, and bright green in colour. It is a bold-looking and handsome plant, one that would tell in a collection of ornamental foliage plants, because of its great distinctness of character and beautiful outline. Another handsome foliage plant is Dracæna fragrans, a species that is largely grown by Mr. Wills for decorative purposes. The bronzy-green leaves are broad, arched and handsomely pendulous; the habit of growth is very regular and symmetrical. It is especially commended by Mr. Wills as a house plant, to stand in halls and various suitable places in a dwelling. It will last in good condition three months, if watered when required, treated to light, and the leaves kept clean from deposits of dust.

Golden Tinted Spruce Fir (*Abies excelsa aurea*).—This richly colored form of the common Spruce Fir bids fair, when abundant, to become a popular tree for planting in bleak and desolate localities, as the rich hues of the foliage are always best in the winter months. It is perfectly hardy, and is as robust in growth as the green variety.—*Garden.*

Blue Pea.—A plant grown from seed from Abyssinia was exhibited at the Royal Horticultural Society. Flowers were said to be of a charming hue of blue, and most valuable for cut purposes. *The Gardener* says that there is no blue annual to compare with it in color, and believes it identical with *Lathyrus sativus.*

Begonia Model.—A strong growing, profuse flowering form; seems to be well adapted for pot culture and conservatory decoration; flowers are large, well rounded, and of a clear bright rose color.—*From Veitch & Sons.*

Scientific and Botanical.

Succession of Species in Forests.

BY ROBERT DOUGLASS.

"THE question of long vitality in seeds, in connection with the succession of species in forests, maintains its interest. A correspondent quotes an observation of Thoreau's, that squirrels are continually carrying large nuts to pine woods, and the wind pine seeds to oak woods; so that, with the constant presence of fresh seed by these and similar agencies, we need not invent a "great vitality theory" to account for the change. The point is a good one to some extent, though one would suppose the acorns would be ready to grow in the oak woods as well as the pine seeds wafted there by the winds, or the pine seeds in the pine woods as well as the acorns the squirrels brought there. The observation will hardly settle the question to the satisfaction of scientists, who want to know positively, and not possibly, that the seeds have been for many years in the soil without growing. For our part, we know of no evidence that will not bear questioning that seeds usually with a very limited hold on life will live under some circumstances for an indefinite number of years. Whoever will prove beyond all doubt this fact will be among the greatest servants of knowledge. It has a bearing on innumerable problems of interest to us all. We are inclined to favor the view of long vitality, but have to confess the evidence in its favor is not what it ought to be to admit of its being classed with truths."

The above article is copied from the science column of the *New York Independent* of February 11th.

I do not think there is any need of a "great vitality theory" to account for the change of species, neither is there any great mystery as to how the seeds for the new forest are furnished. Although we do not admit of a great vitality *theory*, yet we must not overlook the *fact* that many seeds will germinate after lying in the ground a few years. This fact is well known in cases where plum and peach stones, Juniper berries and many other seeds are sown dry, they will continue to "come up" year after year for several seasons.

It is also very well known that land on which any given kind of tree or plant has been grown for a great many years in succession, becomes exhausted of the elements necessary for the future development of that tree or plant, while still in a good condition for the production of a dissimilar species. The rotation of crops in farming shows that this is admitted by all.

Admitting all this, then, the only mystery is, where did the seeds for the new forests come from?

Before answering, I may be allowed to say that the same question was propounded to me nearly forty years ago by an old Green Mountain farmer, and since that time I have spent a good deal of time in the forests, in different parts of the country, and have found no difficulty in fully accounting for the distribution of the seeds, to my own satisfaction, at least.

In the above quotation from *The Independent*, M. Thoreau says: "Squirrels are continually carrying large nuts to pine woods, and the wind pine seeds to oak woods." This is undoubtedly true, and while it is possible that the wind would carry more seeds than the squirrels, the pine seeds are not as likely to produce trees in oak woods as the acorns in the pine woods. Wherever oak and pine forests are found adjoining each other, it will be found, on close inspection, that many young oaks have inserted themselves among the pines, where they are so densely shaded that it is impossible for them to grow up and reach the light, yet they will live on, scarcely making a perceptible growth, and even when this stunted knarled trunk can endure no longer, and dies for want of light sufficient to mature its leaves, and develop its buds, for the next year's growth, even then it only dies down to the collar, while the root still lives and pushes up another shoot in the spring (or several shoots) to grow up till it perishes like the other, still the roots will live. While this process has

been gradually going on, other acorns more fortunate than the ones above named, have been deposited in openings, or in places where the pines do not stand so close, but that they could grow up, here and there, and form a tree that would produce seeds, which are carried still further into the forests to produce other oak trees, yet so few and scattering that they generally escape notice.

The pine tree cannot survive in like manner in the oak woods. If once shaded so as to lose its foliage, it can neither form new buds nor sprout from the collar, but will be sure to die.

Now we will suppose that this forest is destroyed by fire—most forests are either destroyed in that way or by cutting off the timber, and in the latter case the land is often burned over.

It will be found on examination that every pine tree has been destroyed where the fires have run, for even if the bark is scarcely scorched on the trees, if the foliage and small branches are burned—as they assuredly will be—the trees will certainly die, and the seeds will as surely die, for if they are buried in the ground so deep as not to be burned, they will be too deep to push through, so that we need not wonder that so few pine trees are found to grow where it was nearly all pine before.

Now let us watch the stunted oaks in this once pine forest. They are burned down to the ground, but they, and every oak tree you find not more than six or eight inches in diameter at the surface of the ground, will shoot up with astonishing vigor in most instances, while some will branch low and form *scrubby* trees that will produce acorns in large quantities, while mere shrubs in size.

Then the acorns that have been distributed by the few unnoticed trees that stood before the pines were burned, and were buried in the ground by squirrels, or trodden into the ground by animals, so that the fires did not destroy them, get sunlight, and are in a condition to assist in stocking the forest.

As regards the oak forest that we have supposed to be burned off, and what kind of timber will replace the oaks, I have very little to say. I never saw an oak forest destroyed but what produced oaks again if left to itself.

M. Thoreau says the winds carry pine seeds to oak woods, yet I doubt his ever seeing an oak forest succeeded by pines, unless the pine seeds were distributed by man after the oak forest was destroyed. In that case they would undoubtedly succeed, as they will grow in any soil and climate where oaks will grow, and in many others where oaks cannot grow. There are many species of trees aside from pines and oaks that are replaced by others in forests, and many ways for the seeds to be distributed aside from those already named.

Birds are better mediums for distributing seeds to a great distance than squirrels. It is astonishing how many seeds will be distributed by a flock of Cedar birds or Bohemian Waxwings.

Twenty-four years ago I planted a group of trees on the outer edge of the lawn to screen the view of a neighbor's barn from the front windows. The barn was removed five years ago, and the lot on which it stood nicely planted with ornamental trees. Wishing to open the view, and not liking to cut down the trees, I had them trimmed up so that we could see under them. This left a space of less than a square rod of ground free from grass under three Balsam firs that were trimmed up. I went to sow a little grass seed over this bare spot, late in the spring, but saw so many seedlings coming up of different kinds that I concluded to let them stand and see how many kinds there were. I left them without care till the next season; they were then going on two years old. I made a memorandum of them, noting down the number of each, and to my astonishment, I found thirty-three distinct species of trees, shrubs and vines, and five others I marked doubtful. Of some kinds there were two or three hundred, of others not more than a dozen. True, many of the kinds were growing in my own grounds, but some were from at least a mile distant. The only trees that had seeded in this group was a white pine and two or three Balsam firs, yet there was not a dozen white pines nor twenty Balsam fir seedlings in the lot, but a great many wild

Junipers that grow on the lake shore nearly a mile distant.

These Waxwings feed in large flocks on the Junipers along the lake shore, often alighting on the few scattering white pine trees growing on the Juniper ridges, and under these pine trees we find many seedlings, the seeds of which could not possibly have been found nearer than on my own grounds three miles distant. As several of these seedlings are of foreign species, and no trees of the same kinds growing nearer, they must have been carried to that distance by these birds.

Then again we know that seeds can be carried ten times, or even fifty times that distance by the wild pigeon; they will fly that distance in two hours, or a little over, and in their migrations north and south many of them are destroyed by birds of prey, but they will not devour the seeds on which the pigeon has fed. It is no uncommon thing to find the remains of a pigeon in this locality in the fall, with its crop torn open and a handful of as perfect beech nuts, as any one would wish to plant, scattered over the ground. We know that these nuts must either have been brought from Wisconsin or Michigan, for the tree does not grow in this section.

Many kinds of trees' seeds are formed by nature as if intended to be distributed by the winds. This is especially noticeable in the wing of the pine seed, placed on in such a manner as to give the seed a twirling motion, and carrying it quite a distance, even when the air is very still. Also in the poplars and willows, each seed having a float of down by which they are borne along on the water and prevented from sinking until they reach the shore, aside from the advantage it gives them to float in the air.

Then we have tornadoes and whirlwinds that not only carry seeds, but the trees which produce them to a great distance.

Few men who are at a loss to account for the very general distribution of forest seeds are aware of the enormous number of seeds produced by a single tree. A very moderate-sized birch tree will produce two millions of seeds in a single season, and many other species are equally prolific.

The succession of species among the grasses is quite as mysterious as among forests. When I had resided here two years, I had not noticed a single plant of white clover or red-top grass, but in the summer of 1846 I found a plant of white clover, apparently in its second year from the seed; it grew by the side of the wagon track just outside the village. I dug it up carefully, carried it a half mile, and planted it in my garden. In a year or two, by carefully scattering the seed, I had quite a little plat of it, but, to my surprise, I found it by that time becoming quite plenty along the roadsides, and about the same time red-top grass began to make its appearance. Now there are thousands of acres in Northern Illinois self-seeded with white clover, June grass and red-top, where neither of them could be found thirty years ago. This seems unaccountable at first sight, but when we consider that there are about seven millions of red-top seeds in a pound in weight, we see that the seeds are so small that they could secrete themselves in every chink of every emigrant wagon, in packing materials, such as among the crockery packages. Nearly every emigrant wagon contained a few dishes to commence in housekeeping, and it is but reasonable to suppose that they were, in most cases, packed in a little fine hay, as mine were, and from these and similar accidental circumstances have been produced most of the valuable red-top meadows of Northern Illinois.

Oregon Pine.—A recent test of the relative strength of oak and Oregon pine, made at San Francisco, with bars an inch square and three feet long, showed that the pine was equal to the oak. Both broke under the same weight placed in the middle of each bar, namely, 260 pounds.

At an international agricultural exhibition in Bremen was a collection representing the adulteration of seeds. It contained a sample of sand carefully washed, colored and put up in the best manner, for sale as clover seed, under which name it brought three and one-half cents a pound.

The Flower Garden.

Roses.

Their Cultivation—Varieties, Etc.

[Continuation of Mr. Pentland's Address, read before the Maryland Horticultural Society.]

I SHALL now endeavor to enumerate a few of the best roses as I have classified them, both of old and newer varieties, as they occur to me, and I shall not, as many do, enumerate those in particular that I may have a large quantity of for sale, for I fear that, of very many of those that I shall mention, I could not offer a single plant, and shall only mention such as have some good quality to recommend them, either in color, size, form or good blooming qualities, or otherwise; and the first upon the list that I shall name is perhaps the largest flower of them all, of beautiful form and color, namely, Anna de Diesbach, a bright rose color. Then comes that fine noble old rose Baronne Prevost, brilliant rose; Auguste Mie, bright glossy pink; Caroline de Sansal, flesh color, always beautiful; General Cavaignac, of beautiful form, rosy pink, blooms well; La France, bright pink, none better, and the nearest approach to a perpetual of any; Madame Domage, quite a gem; Comtesse de Chabrilliant, I believe, is the finest formed flower of them all. These are all bright colored. Of the dark dazzling colored varieties we have Triumphe de l'Exposition, always fine and good; Jules Margottin, hard to beat, and generally in the winning stand at exhibitions; General Jacqueminot, known to you all; Geant des Battailles and General Washington—the two last named are among the best grown, as they are tolerably constant bloomers, particularly the last named one; Gloire de Santenay, fiery crimson, beautiful; Prince Camille de Rohan, blackish crimson, fine; Souvenir de Wm. Wood, dark purplish crimson, very effective; Xavier Olibo, velvety black, brilliant, grand. The four last named, in color, form and substance, are hard to beat. Then, of the lighter colored crimsons, we have Prince Leon, not quite so good a grower as the others, but superb; Prince Albert, old but never excelled as yet, in my judgment, as a first-class rose, and blooms constantly, which is a great recommendation. There is one other I will mention in this class, namely, Victor Verdier, a deep rose, of exquisite form, very large, withal a good bloomer. In the hybrid perpetual class there have been so many new ones added to the list every year, that it is difficult to keep pace with them, but in my humble judgment there is as a general thing only a difference in name. True, there are very many besides those mentioned that are really first-class, and worthy of a place in any collection, and very many equally as good as those mentioned. Of the white varieties of this class, there are not very many; the best that I know are Princess Clothilde, Baronne de Maynard, Madame Plantier, all pure white; Madame Vidot, flesh, nearly white, of exquisite shape and always good, and Madame Rivers, nearly white.

Of the *Bourbon* class, I consider the following named varieties among the very best, being both good growers and constant bloomers. I shall name them in the order of merit, and, at the very head of the list, I must place that grand old rose Souvenir de la Malmaison, clear, flesh, and the largest flower—this rose has not been excelled as yet; Hermosa, clear bright pink, of exquisite form, and always reliable, and has never been excelled; Madame Bosanquet, pale flesh, beautiful in bud and of good substance and very constant. I shall never forget the time when, thirty-two years ago, I potted about this time of the year the first plants of the three last named roses that were ever in the United States, together with about thirty or forty others, some of which have gone out of existence, and others again remain to this day (among the best of them was that fine old rose, De la Reine); nor how in the summer of that year I used to watch for the first flowers that were to show us what they were, and when, with my employer, we watched daily for their expanding! And when they did expand what a glorious sight met our eyes! How we feasted our eyes upon their virgin beauty! I felt like worshipping them, and thought that we had reached the

very acme of perfection in rose-growing, and so I think still with regard to them. Didn't we snub off their beautiful flowers quick and despoil them of every flowering bud that they had, and never let them display another flower that year, for fear others might see them! If you had seen how we treated them you would have been very likely to have called us selfish brutes, we cut and mangled them so very fearfully; but at the same time you would have wondered how, otherwise, we treated and guarded them so tenderly, and fed them with the very best food they liked; indeed, had they eaten gold in quantity, I believe my employer would have fed them with it, knowing full well that they were going to return it ten-fold—and so they did. But I digress, and to return; Acidalia is old, but superb, and the whitest flower of this class; Queen of the Bourbons, fawn and rose, very beautiful; Madame Masset, nearly white, a beautiful imbricated flower, like a miniature Camellia; Appoline, light pink, first-class bloomer; Imperatrice Eugenie, deep rose, large and beautiful; Souvenir de Levison Gower, salmon rose, a peculiar color, belonging to itself alone; this rose is called by some the pink Souvenir; it is quite as large as that variety; it is very liable to get mildewed. That very old rose Monthly Cabbage, is one of the very sweetest and most beautiful roses of this class. I knew it thirty-five years ago as the Gloire of France, which is its proper name; George Peabody is one of the darkest roses of this class, and is also a great bloomer. I might mention many others, but I think we have in those quite a sufficiency for a distinct variety.

Bengals.

Of the *Bengal* or *Chinese* class, the best are Agrippina, dark brilliant crimson, of the best form and blooming quality; Archduke Charles, very changeable in color, sometimes one-half of the flower is white, the other crimson red; Louis Phillippe, crimson, a good bloomer and grower; Eugene Beauharnois, amaranth, very beautiful; Lucullus, blackish crimson, small and beautiful; Reine de Lombardy, bright red, vigorous and always pretty; Rival de Pastum, yellowish white, and Indica Alba, pure white, are the only two light-colored roses in this class that I am acquainted with.

Noisettes.

Of the *Noisettes*, the following are always good: Triumphe de la Duchesse, pale rose, and a strong grower; Lamarque, pure white, but rather tender—does best further south; Jaune Desprez, fawn and pink, very sweet, but quite tender; Ophire, coppery nankeen, very pretty and constant; Woodland Margaret, pure white, and one of the most profuse-blooming roses grown; Beauty of Greenmount, carmine color, of beautiful form and fine blooming qualities; Amie Vibert, very pure white, and constantly in bloom, but too tender for this climate, when the thermometer gets down to near zero; Solfaterre, sulphur yellow, a beautiful rose; Madame Deslongchamps, pale flesh, very large, flowering in clusters; Cloth of Gold, or Chromatella, is one of the most beautiful roses grown, but how seldom do you see a perfect flower of it! It is too tender to withstand our winters, but further south it is a most glorious sight to see a wall covered with a plant of this rose; to see the great golden globes depending from every branch, and its fragrance filling the air. Who would not desire to possess a plant of it, in such a condition? I have my doubts of its being a true Noisette at all, but would class it among the Teas, as there is where I think it belongs.

Teas.

And now I come to the last class that I shall mention at this time, and that is the Teas, and the one that I shall place at the head of the list is the Marshal Niel, the best yellow rose, without doubt, yet introduced, although I have heard of one that the French say will beat it. I cannot say, for I don't think any person has seen it as yet, and it will, indeed, be choice if it does surpass it; Gloire de Dijon, fawn, beautifully shaded with yellow, a free grower and bloomer; Sombreuil, white blush tinge, large and very fine; Madame Damaizin, buff, salmon tint, good; Homere, rosy pink, outer petals salmon, globular and very double, very choice and good; La Sylphide, incarnate blush, large and fine; Duchesse de Brabant, peachy pink, very fragrant, a great bloomer, forces

well, a choice rose and hard to beat; Madame Maurin, cream and fawn, large, full and of beautiful form; Adam, salmon and fawn, large, sweet and fine, none better, quite distinct; Safrano, apricot yellow, beautiful in bud, and perhaps the most extensviely grown rose in the whole list; Isabella Sprunt, pale yellow—is a sport of Safrano; the above are all tolerably hardy, and always give satisfaction, being strong growers; Archduchesse Therese Isabella, is a creamy white, large and a most beautiful rose; Caroline, pale, rosy pink, or blush, a fine old rose; Devoniensis, creamy white, sometimes blush in centre, one of the oldest and most beautiful roses we have; Eliza Sauvage, clear white, large and very double, tender and beautiful; Louise de Savoie, pale yellow, large and full, fragrant and first class; Madame Bravy, pure white, centre blush, beautiful form and a free bloomer; Madame Charles, a much improved Safrano in color and form, but not so good a grower as that variety; Triomphe de Luxembourg, buff and salmon, a most beautiful old rose, and always a great favorite; Souvenir de David, dark crimson, the darkest in this class. Those last mentioned are mostly old varieties, and many of them are quite scarce, but they are hard to excel; they do not grow quite so strong as the former mentioned kinds.

New Varieties.

I shall now enumerate a few of the newer varieties, together with some that are really choice, but old ones, and which are only fit to be grown in pots continuously, owing to their extreme tenderness, but which, for their great beauty, are always worthy of a place in the greenhouse or conservatory, at the head of which I shall place that fine old rose called Yellow Tea, which, for delicacy of color, delightful fragrance and beauty of bud, has scarcely a peer, and, in my judgment, has never been excelled; the Viscomtesse de Cazes, yellow with coppery tinge, double and beautiful also in bud; Princess Marie, buff, rosy blush shaded, large and full, most beautiful—this is a very old rose; Lays is a creamy white, beautiful in bud; Madame Margottin, yellow, rose centre, a very beautiful rose; Madame Furtado is one of the best of the newer roses, as is also Madame Falcot, nankeen yellow; Reine de Portugal, a double golden yellow; Olymphe Fraciney, white with creamy shade. I never could see any difference between this and the much-lauded rose called Bella. In fact, there are so many of them that look so much like each other, that it takes a strong discerning power to see the difference in them. There is one other I must not forget to mention, namely, the climbing Devoniensis, which is a most beautiful rose, and quite a strong grower; Jean Pernet is also a very pretty pale yellow rose; Belle Lyonnais, dark sulphur yellow, and one of the very best of the newer roses; Souvenir d'un Amie, bright rose, large and fine, and makes large buds, and is a strong grower; Souvenir d'Elise, a beautiful delicate blush, large, globular and of exquisite fragrance, an old rose that I scarcely hear of any more. The rage for new names has driven many of the fine old sorts out of cultivation, and there are certainly not many of them that excel most of the older varieties. I had, at one time, seven hundred and fifty named varieties of roses growing in one house on my place, and in a situation where I had every opportunity to observe their characteristics, and I must confess that I could not select one hundred distinct varieties from the whole lot, and since that time there have been added to the list of names at least as many more, many of which I know to be most exquisitely beautiful; but I will have to take another occasion to speak of them, when I hope to be able to show what advance has been made, as also to speak to you and tell you how to cultivate them in pots, in order to show to what a state of perfection they may be grown in that way as exhibition plants for horticultural displays, or for decoration of the greenhouse or conservatory, as also how new varieties are obtained, their general propagation, and other matters connected with roses. I will close this paper for the present by a quotation from Leigh Hunt:

"Whatso'er of beauty
Yearns and yet reposes,
Blush and bosom and sweet breath,
Took a shape in roses."

Gardening.

Plants For a Little Garden.

I READ on the outside of cover of your January number: Ask questions freely. This invitation struck me, as coming in a free, hearty manner, which encouraged me to ask for information. The last two days' prospects of this severe weather, passing away, makes me look again out of my little plant house into my garden, and wonder what little alteration I can make; how shall I plant, what shall I plant, and how shall I arrange what I plant, to make my little place a source of greater enjoyment and pleasure to myself, my wife, my family, my friends and passers-by than it was last year? I say passers-by, for I confess I feel flattered when I see such an one deign to pause for a moment to look. I doubt not but that my taste concerning plants *suitable* for planting in a little garden, from which I hope to derive real pleasure during the whole of the season (in the morning before business, in the evening after a day of care and thought), may be different to some, but may agree with others. I consider the pleasures to be derived from a nice drive through a park are of entirely a different nature to that of a garden at *home*. In the park I am in the world, but in the garden at *home*, sitting under my vine or shade tree, with my wife and family engaged with me, examining with my glass, or lens, the almost hidden but exquisite beauty of some newly opened flower. This is one of the home pleasures, and how it refreshes and invigorates the mind, and prepares it for the next day's battle of life. Among the varieties of plants suitable for park decoration, I consider, are Cannas, Coleus, Perillas, Petunias, Wigandias, ornamental grasses such as Arundos, Erianthius, Gyneriums, Gymnothrix and Ricinus. I do not, by any means, say exclude these from the garden—they are good in their place—but I do think there are plants which are capable of affording more solid pleasure than they for the more (shall I say?) sacred parts of the garden. The plants enumerated as suitable for parks you may see and enjoy if you are driving six or eight miles per hour, which I think fast enough for park enjoyment. We do not require a glass to assist us to see the beauty of these things—that I reserve for home amusement. The choice part of my little garden consists of a group of some twenty small beds. I have already a lot of favorites for this spot, but want more. I would be glad to hear of any addition to present collection through your most welcome paper. January number, '75, is the first I have received from you. I have the following that prove suitable: Echeverias, metallica, metallica macrophylla, metallica glauca, secunda, secunda glauca, gibbiflora, gibbiflora metallica, Californica, pumila, rosacea, carinata, Abyssinica, letusa floribunda, letusa glauca, lutea grandiflora and atropurpurea. These stand the sun and drought, with me, without getting in any way disfigured. The most tender appears to be (with me) Californica and pumila. My variety of Sempervivums do not stand the full sun so good; have therefore to select a different place for them; this a loss, for I am fond of them for edging in front of Echeverias. My pet plant is Pachyphytum bracteosum; they seem to welcome the clear shining sun; the bloom of them is very beautiful, too, right through the winter. Some few varieties of Sedums suit me well for edging outside other things, such as Sedum acre; it is such a beautiful dark green, and good all the time; also S. Brownii, populifolium, carneum variegatum. These I can keep in boxes in a cold frame through the winter. I also find a few of the varieties of Agaves very pleasing. Mix in a bed with suitable plants. I use H. Verschaffeltii, filifera, densiflora, jacquineana, heteracantha, sisalana, salmiana, coccinea, applanata, Ghiesbrechtii, and sometimes a neat plant or two of Americana and variegata. Picta is too loose of habit. With these I have mixed Ficus elastica, nitida and Bengalensis: these bear the sun without injury. Intend trying this year Ficus macrocarpa, macrophylla, Cooperi, Chauvieri and Afzeli. Some Yuccas, I find, help to make variety, which is gene-

rally pleasing; Y alocifolia, aloeifolia variegata, aloeifolia purpurea, aloeifolia gigantea, recurva, canaliculata, quadricolor, plicata, conspicua, aspera, nivea, flaccida, viridis, Sieboldi, gloriosa, baccata and krevifolia; but the most beautiful of all is conspicua af Fourcroyas. I use only rigida and interrupta.

For scarlet color I use Geranium, General Grant and some good double variety mixed, the one supplies foliage, the other bloom. But my best scarlet blooming plant is Hibiscus sinensis; its beautiful dark green, glossy, foliage and abundance of bloom renders it all one can wish or ask for. Vincas alba and rosea are indispensable both for bloom and foliage; also being a plant that can be so fully relied upon, feeling quite at home and happy during our warmest seasons. Basella rubra is very fine here, only truly happy when enjoying a good stock of sunshine; neither does it mind a few days of dry weather.

Peristrophe angustifolia aurea I must have on account of its beautiful colored foliage and neat compact habit, but have to keep a few in pots, in reserve in case of failure. Alternantheras, indispensable (character in January No., page 6), Centaurea gymnocarpa and candissima are the most suitable for my place. I find Araucaria excelsa a beautiful centre plant, or Brasiliensis from three to five feet high, according to surroundings. I cannot use annuals, for, as a general rule, they are sown, grow, bloom, die and leave a naked patch. I like a few on the borders with Cannas, Coleus, Lantanas, Ageratums, Petunias, Verbenas, Salvias, etc., etc.

I had forgotten Achyranthes Lindeni so valuable for color of its foliage. Cuphea platycentra is also good.

I have but one out of my many varieties of Caladiums that thrives in sun; I have one, but have no name for it, so I consider that is quite as bad as having only half one.

I should like to hear of any really valuable addition to those mentioned. I don't want what will not stand a good sunning and come out good at last.

A Lover of Flowers.

About Wistarias.

BY A. S. FULLER.

OUR native species of the Wistarias, *W. frutescens*, is found quite abundantly along the banks of rivers in some of the western and southern States. It is one of our most beautiful climbing shrubs, bearing long pendant racemes of bluish-purple, pea-shaped flowers, blooming late in spring or just after the appearance of the leaves.

The plants usually produce seeds quite freely, even when young, and seedlings grown therefrom show a strong tendency to break from the parent type both in characteristics of growth and color of flowers, and this, too, without cross fertilization. Several quite distinct varieties of this species have already been produced, but there is room for many more. The American White Wistaria, *W. frutescens alba*, is rather a dwarfish variety, but blooms freely and is an excellent variety for forcing in winter. The flowers are white, produced in a short but very dense raceme.

Magnifica.—This is also a variety of our native species, but the flowers are much larger and the racemes longer than the above, and of a pale lilac color; it is the most rapid growing of all the Wistarias which I have ever cultivated. The shoots are not as large and stocky as the Chinese species, but grow to a length of twenty or thirty feet in a season even in a moderately rich soil; these shoots, as is pretty well known, are exceedingly tough, equalling in strength an ordinary hemp rope of the same diameter, consequently may be put to good use in tying up other plants to stakes or other purposes.

For the past half-dozen years or more I have cultivated a row of this plant in my garden, and it has furnished a goodly quantity of natural ropes and coarse twine annually, which came in quite handily in tying up bundles of trees and plants, and I think every farmer could afford to set out a few dozen plants for this purpose, if for nothing else. The shoots are stronger than the best basket willow, besides one can obtain ties of greater length. The plants should be cut down to the ground every spring in order to obtain an abundance

of thrifty young canes. This variety also propagates freely from layers, in fact the canes which are permitted to lie on the ground during the summer become well furnished with roots their entire length. Of course, if the plants are desired for ornament the canes must be tied up to stakes, trellis, or trained upon trees or some similar support.

Chinese Wistarias.—These are superior to our native varieties for ornamental purposes, and have few or no superiors among hardy climbing plants. The common Chinese Wistaria, *W. sinensis*, is an elegant, rapid growing, climbing shrub, bearing a profusion of pale-blue flowers in early spring before the appearance of the leaves.

With very little pruning in summer, or by frequently pinching off the ends of the tender shoots, the tendency to climb may be thwarted and a handsome, low-growing, stocky shrub may be produced, instead of a rambling vine. When trained in the form of low shrubs of from four to six feet in height, the Wistarias bloom more freely than when permitted to extend their growth without restriction.

The Chinese white Wistaria is also a handsome variety, although not quite as showy as the blue. The racemes of this variety, under good cultivation, are nearly or quite a foot in length, and appear at the same season as the former, from which it was produced.

There is also a double-blue variety of the Chinese Wistaria, but not, as yet, very widely disseminated, consequently its value is somewhat uncertain.

The name of this genus of plants was given it in honor of Prof. Caspar Wistar, of Philadelphia, Pa., and should be spelled as above and not Wist-*e*-ria as it frequently is in nurserymen's catalogues and elsewhere.

Fungus Plants.

BY S. J. PARKER, M. D.

A VERY interesting course of lectures has been had by Prof. Printess, of the Cornell University, on these plants. Though in a rather scientific, brief style, too abstract, perhaps, yet these lectures have explained to those attending them the reason of rose mildew, wheat rust, some of the mysteries of potatoe rot, hints at pear blight, peach yellows and other forms of injury done to crops of the farmer, and to useful plants. Though I cannot, except in a series of articles, explain the illustrations of the subject of these microscopic plants as he presented them, yet I cannot but say that when the literature of botanic science is so rich on these subjects, it is strange that in a practical form these plants are not in a shape, such that every horticulturist and farmer might understand them. The lecturer began by the cup-shaped minute plant on the Mandrake; explained its so-called "spawn" or spider-web like roots, or in technical language *mycelium* of the plant, how it grew in the leaf, as in a soil, and throve on the top of the leaf, the cup or fruiting apparatus, and the "seeds" or *spores* of the plant. It is these last that are the *mildew* that is visible to the eye of any one, and according to its color, and the plant or place it is on, has the names of *mildew*, *rust*, *blight*, *mould*, *fungi*, *burnt*, *smut* and other popular names. Then he explained the rose rust, and its peculiarities, and went on to the full list, lecture after lecture. Now, all these facts are of vast importance to every one who raises a plant or an acre of wheat or other crop, for they explain what to most persons is a totally unknown cause of the destruction of thousands and millions of dollars worth of the food and useful plants of the world. I only, in this article, call attention to the fact that these matters are explainable, not perfectly, perhaps, but to a great degree; and to the necessity that knowledge like this be diffused in a manner that has never been done before.

Not less useful was his explanation of dry rot, and other forms by which cut timber as well as growing trees, useful for lumber and timber, are affected.

These two subjects are but a part of the beneficial facts that are annually explained in Cornell University as the result of Mr. Cornell's beneficence, and the proper use of the Congressional grant of land for the Agricultural, Mechanical and practical arts of life.

Small Wood-Eating Black Ant.

BY S. J. PARKER, M. D.

MR. STAUFFER, of Lancaster, Pa., describes a minute small ant, whitish in color, that destroys plants in a singular manner. I wish to name another fact; it is the very black shining ant, with large head and neck, but small body, that eats the wood of boxes and receptacles for plants occasionally in this vicinity, the boards of the hot-houses, and wood in similar situations. Moderately damp or dry wood is its choice, and no place so attractive as the tops of my bee-hives; these it penetrates by openings so small as to be hardly perceptible to a common observer; and it honeycombs the top boards, yet not to such a degree that it falls to pieces. The warmth of the hive and the dampness caused slightly by the breath of the bees are its delight. It is torpid in winter, and very active all summer. It occasionally makes covered ways up the posts on which the hives stand. When its channels and nests in the wood are full, it comes out and fills the spaces between the top of the hive and the honey boxes with brood. The smell of the brood and crushed ant is unpleasant. I have never seen the ant in the honey boxes or in the honey of the hive. But it will eat and penetrate to the larvæ of the bees in the hive. It procures large supplies of food by running off on trees, and its running ways to long distances are perceptible. It will not destroy a hive of bees, but does damage and is a nuisance to an apiary. If sources of food are within reach, its damage to casks, boxes, etc., in which large plants are standing is often quite extensive. It takes advantage of decayed cut spots in orange trees and other plants. Occasionally devours a stalk of a plant. I have not studied the various varieties of its workers, soldiers, and male and female insects. Carbolic acid will destroy all it reaches of them. But yet gallons of them them escape in the top of every hive, do the best I can. Brushing is the best way to get rid of them. It must be done every day, if all in reach.

Japan Judas Tree.

BY A. S. FULLER.

I AM not certain whether Japan has ever given us a species of *circis* or not, but somehow a beautiful shrub has got into our gardens under the name of *Circis japonica*, or Japan Judas tree. The first specimen I ever saw was in the old Linnæan nurseries of Prince & Co., at Flushing, N. Y., some twenty years ago, and it was then about eight feet high and six in diameter, several stems rising from the one root, forming a very dense clump, each stem and twig completely enveloped with bright crimson flowers. This was in early spring before the leaves had expanded, and I thought then that it was the most beautiful shrub I had ever seen. I secured rooted layers from that old plant, and have cultivated them ever since. From the same source other plants found their way into a few other nurseries in the immediate vicinity as well as into many private gardens. I consider this species far superior to our native one, the flowers being more numerous, larger and of a brighter color. It is a low-growing, stocky, shrub, requiring no pruning to develop flowering branches; the leaves are large, four to six inches broad, heart-shaped like our native species.

The above does not accord with the account of this genus in HORTICULTURIST for March, page 73, where the writer of "Suggestive Notes" would lead us to infer that there was only one species of *cercis* adapted to the climate of the eastern States. It may be that this so-called Japan shrub is after all a really distinct species not so well known among our nurserymen as I had supposed it was from my own long acquaintance with it. But it is a grand ornamental shrub, no matter what its true name or where it came from originally.

A Rose Without a Thorn.

THE often quoted phrase, "The rose is not without its thorn," is taken as gospel. But there is one instance where even this is out of place.

In clearing up a hillside facing the west, I found several Prairie Roses—they are plenty

in this country, and all but this one as thorny as they well can be. That it is a rose-bush there can be no doubt, for the growth, the wood and the fruit pods all show that it is a Prairie Rose. That the flower is small we can easily judge from the small seed bolls; and what its color is I do not know, but the fact of its being entirely free from anything even approaching a thorn or even prickle, may be the starting point of something new. I will send herewith a small cutting, as well as of the fruit, and you can judge for yourself if it is anything else than a rose. I noticed that it had made two little layers, one of which I will send you in the spring, if you desire it.

Should it prove anything else, of course the floral friends will have a joke on me, but I will risk it. S. MILLER.

Bluffton, Mo.

Queries About Virginia Creepers.

THE writer of the article on the "Virginia Creeper and Scarlet Geraniums" must live in California, or some such favored region, to grow Geraniums *ten* feet high, and keep them out of doors all winter. If he lives in a climate where the mercury falls below zero, I *would like to know* what *protection* he gave them through the winter, and what *extra cultivation* to make them grow so tall. I would think it was a misprint, and that the writer meant the *Virginia Creeper* was trained on the wire pyramid, if it were not that he says they were a complete pyramid of *foliage* and *flowers*. Geraniums are a specialty with me; I have grown some very fine specimens, and would like to grow them on as *grand* a *scale* as represented in the article.

A. E. HARTSHORNE.

New Lilacs.—These are announced in various quarters, and it is only surprising that there are not more of them, for the beauty of this grand, early flowering shrub is proverbial. Among the new varieties referred to, *Ville de Troye*, a dark-flowered and late-blooming variety, promises well, and *Rouge ponctué*, of very bright color, is equally good. *Giant des Batailles* and *de Croucels* are both of them brilliant varieties. The blossoms of *Gloire des Moulins* are flesh-colored, and said to be very fragrant, while *Aline Mocqueris*, of dwarf growth, and a very abundant flowerer, may prove extremely valuable for planting nearer to the fronts of shrubberies than the taller-growing kinds. Notwithstanding all this wealth of novelty, we still find the old kinds alone used in planting of new shrubberies, even the magnificent and well known variety distinguished as *S. Lindleyana* being as yet found in very few gardens.—*The Garden.*

Siberian Arbor Vitæ.—In the valuable address of Mr. S. B. Parsons, published in THE HORTICULTURIST for January, is this passage: "The *Siberian Arbor Vitæ* is, however, much superior to it because more hardy." I wish to inquire whether this accords with your experience and that of your readers. Is the Siberian more hardy than the American Arbor Vitæ? COLUMBIA.

Answer.—Each is so thoroughly hardy that we have no means of deciding the point. I never knew either to be injured by excessive cold weather alone. Cold accompanied by severe drought badly injured both a few years since. *Siberian* is a misnomer, it never saw Siberia, being only a form of the American Arbor Vitæ, and going back to the original type from seed.

The English Yew.—A writer in *The Rural New Yorker* says that this, as well as other dwarf evergreens, and especially those of foreign origin, needs a soil for its roots covered or embedded with stones or among rocks. Nature demands for many varieties of evergreens and creeping plants a cool, steady moisture for their roots. If such be supplied, their foliage is not liable to burn and brown; but without such moisture at base, let me say, the man who plants the yew should plant only our American variety.

Fruit Culture.

More About Catching Curculios.

BY M. B. BATEHAM.

SINCE writing the notes on Plum Culture in Ohio, contained in the last number of the HORTICULTURIST, I have received a letter from the Messrs. Brown, giving a more particular description of their method of catching curculios; and as the subject is one of general interest I give the following, as an amendment to the article on page 52:

The implement used for jarring the trees should not be called a "pounder." It is in the form of a crutch, about eight feet long, and is used more as a hook with which to *shake* a tree suddenly than for jarring with a "blow," as the latter mode would be pretty sure to wound the bark at a time when the sap is in full flow.

This crutch or hook is carried on the "catcher," and used by the same person that runs the "machine"—this being found more economical than having a second hand go along to do the shaking.

The Messrs. Brown say that one man will easily go over eight hundred trees in half a day, doing the whole work. Last season they used three machines and three men, going over two thousand trees, twice each day, for two weeks. They went over them once a day for a few days at first, and also at the close, making thirty times in all. It is probable they will find it necessary to continue the operation longer, and that the process will take more time when the trees become a few years older.

Painesville, O.

Quinces.

AT a recent discussion on this subject before the Maryland Horticultural Society, Major King said the cultivation of this fruit, if properly carried on, would prove more profitable to our people than going to Florida and spending their money in the purchase and cultivation of orange trees. In our market quinces seldom sell for less than seventy-five cents per peck—six to eight cents a-piece. This fruit deserves systematic cultivation instead of the careless system of a tree here and there in the corners of fences and in wet places, untrimmed and choked by weeds. Among the varieties may be named the Angers, the Apple, Orange and the Pear Quince. The Angers, though used for dwarfing pears, yields an excellent fruit. The Apple Quince is the most cultivated. The Pear Mammoth is an improved variety of this quince. In New York a grower raised some $500 from one-third of an acre, from the fruit of this variety, the fourth year from planting. The Pear Quince is not so prolific and the fruit is not so desirable as the other varieties. The true cultivation of the quince is very simple and easy—it being a hardy plant. It should be planted in dry, loamy soil, well deepened and fertilized with coal ashes.

Judge Gray thought that the gentleman had rather exaggerated the value of the quince. He had brought them to the market and could not sell them. Would be glad to contract to deliver his crop at $2 per bushel.

Mr. Calkins, of Calkins & Brooks, said, the reason quinces did not sell well in New Jersey was that they ripened with their peaches, and were therefore not as saleable as those raised in northern New York, where the fruit matured later.

Mr. Needham said that difficulty might be obviated by keeping the ground cool around the trees. Many do not know how to cook the fruit properly.

Coal Ashes.—The question of the real value of coal ashes in agriculture has often been raised, but nothing very definite determined. At the last meeting of the Pennsylvania Horticultural Society, Mr. J. B. Jones said that he had found coal ashes exceedingly useful to put around trees, stimulating them, making a good mulch and surpassing in their effects good composts.

Mr. Hoopes said that coal ashes were invaluable for mellowing heavy clay soils.

Mr. Landis had found them very effective as a protection against mice in a young orchard. Dig the ground away and put ashes some inch or two deep, and he had no trouble afterward with mice.

Mr. Carter had tried bone and wood ashes on fruit trees, in comparison, and found the bones far ahead. In fact, he found that wherever he found manure good for corn, it was just the one to suit his trees.

Grafting Cherries. — Inquiries being made as to propriety of top grafting natural cherries, some recommended and others opposed. Mr. J. B. Jones says to graft cherries it is necessary to cut the scions in winter and graft very early before bud swells.

Peach Trees.—President Heiges preferred mineral manures or alkaline salts to animal manures—had succeeded where others had failed. Of four trees of Hale's Early from the same nursery row, three did not produce eight peaches, whilst the fourth gave three bushels. To this one he had applied half a bushel of unleached hickory ashes in the fall, and a peck of the same just when the fruit began to color.

Mr. Pennypacker, from ten Hale's Early trees, had sold last season $32 worth of peaches. Tannery ashes had been used for them.

Mr. Carter suggested muriate of potash as a substitute for wood ashes.

Blight—Pear Tree.

AT the last meeting of the Norfolk (Va.) Horticultural Society, the President, G. F. B. Leighton, in discussing the question of Pear Blight, said:

"Some of you will recollect that in response to inquiries for information on this subject, the Commissioner of Agriculture recommended the use of carbolate of lime with sulphur added, say one pound of sulphur to six or eight pounds of carbolate of lime reduced to the consistency of thick whitewash, and applied to the diseased parts, and where the bark is diseased remove the outer portion before making the application.

I have used this with magical effect on blighted or diseased trees, but in the future I shall use the formula recommended by the Hon. William Saunders, of Washington, who has charge of the public grounds, as being more economical than the above, on account of the volatile nature of carbolic acid, to wit: To a half bushel of lime add four pounds of sulphur—slake to the consistency of whitewash; and when applied, add half an ounce of carbolic acid to each gallon of wash, and apply as above directed.

In answer to questions as to how I dissolve bones, I would remark that I have a large iron box into which I put layers of bones broken into fragments, ashes, etc., as follows: To 100 pounds of bone add 100 pounds of wood ashes, mixed with 25 pounds slaked lime and 12 pounds sal-soda. When packed add 20 gallons of water. In from six to eight weeks the bones will be reduced to a pulp, when a sufficient quantity of dry earth should be added to absorb the ammonia.

Much has been written for and against the cultivation of clover among pear trees as a mulching. As the idea appeared feasible to me, I sowed seed among about nine hundred trees in the spring of 1872. In May last the foliage looked rather sickly, in comparison with those by their side, where clean culture had been adopted, and the clean culture trees held their superiority of appearance until July, when the trees among the clover advanced to equal appearance as those of clean culture. September gave the trees among the clover a decidedly better appearance than those of clean culture. October revealed the fact that the foliage remained two weeks longer on the trees among the clover than on those of clean culture.

While it will require more time with me to make a fair test as to the advantages of this method of cultivation, I am inclined to the belief that trees six years out can be safely and judiciously cultivated under the clover system inaugurated by Mr. Meehan, of Pennsylvania, if properly sustained by surface application of fruit food.

Florida Fruit Growing.

AN active Horticultural Society has at last been started in Florida, known as the Florida Fruit Growers' Association. Among the members appear the well known names of L. A. Hardee and H. S. Hart, the great orange growers of the State. At their last meeting A. J. Bidwell, of Jacksonville, read an essay on grape culture, in which he gave seven years' experience with northern varieties of that fruit. He recommends Hartford, Delaware, Creveling, Ives' Seedling, Concord, Rogers, Nos. 4, 51, 19 and Telegraph for early, and Salem and Rogers No. 1 for late. Of the above, Hartford is the earliest.

He plants 8x10 feet and trains to stakes. In the discussion that followed we learn that the mocking bird and rats are troublesome to grape growers. The cultivation and making of wine from the Scuppernong grape was discussed by Col. M. Martin and others, and a receipt for making orange wine was furnished by James Burt, with samples made in 1873. A national botanical garden in Florida was advocated by C. Drew. Large yellow bananas, grown at Palatka, were exhibited, and an essay on them was read by A. L. Eichelberger, of Ocala (Orange Lake). This gentleman has been growing them since 1852, and now has twelve acres of the "Florida banana" in cultivation. He grows three varieties. He cuts the bunches for shipment from the stock when the fruit is perfectly developed. He cuts the different tiers that form the fruit bunches from the stem, and packs them closely with straw or moss in perforated barrels or in crates. In the discussion Mr. Cunningham pronounced the Martinique the best variety, and said any kind could be cultivated here.

Orange culture, however, was the most interesting topic, no less than three essays being read upon it. It is claimed that the Florida fruit is finer than that from other regions, and its culture must be profitable.

The officers elected, are P. P. Bishop, San Mateo, as President; Hamson Reid, of Jacksonville, Vice-President; Charles H. Walton, Tallahassee, Secretary; J. M. Whitney, Jacksonville, Assistant Secretary; C. Codington, Jacksonville, Corresponding Secretary, and C. Drew, Jacksonville, Treasurer.

West Indian Scenery—Fruits in Cuba.

NATURE, indeed, is very much to be admired, says a correspondent, especially when you are viewing her in orange groves, where oranges, for the trouble of picking them, hang invitingly over your very mouth, seeming to say: "Eat me, stranger."

Some are small and green as gooseberries; others are as big as your head, and of the bright hue to which they give a name. Next on this caste of nature's desert are the heart-shaped, smooth-skinned *Mangoes*, with their massive and symmetrical trees. They are followed by a procession of Lime trees, Citrons, Nisperos, Granada, Maranones, Arrones, Zapotes, Mamoncillos and a host of other fruits with strange shapes and equally odd Hispano-Indian appellations. I grieve to relate that the king of fruits—the Princely Pine-apple—is far from being the exalted personage you would have expected him to be. Like a Bachelor Cabbage, he grovels in solitary state under our feet; he plays at marbles with Pomegranates, and practices tilting at the ring with Citrons. Throw into the scene a few parasites and Plantain trees with slender trunks and colossal leaves, fill in the foreground with gigantic Ferns, Aloes, Palmettoes, and the background with spotless blue, select for yourself, from the nearest hot-house, where specimens of exotic plants are nursed, and you are with a

"Pearl of the Antilles."

The Champion Grape.—F. W. Lay writes to the *Rural Home:* The grape, though by no means of high flavor, is, I think, valuable for its earliness, being about a week earlier than Hartford, and does not drop from the stem like that variety. As I have before stated, it does much better on a light, sandy soil than it does on a strong, heavy one, and should always be grown on such soils, and will here be found of quite good flavor, large and showy bunches, and a free and hardy grower.

Window Gardening.

Vines for both Garden and House.

BY ANNE G. HALE.

VINES are so graceful in their habits, and by their soaring, gliding or clinging growth so readily transform uncouth or decaying architecture into objects of loveliness or grandeur, that we secure a large number of them when selecting garden plants. There is something inexpressibly charming in the rapid growth and lush tenderness of annual vines; and many species after one season of life in the open air will prolong their existence through the winter within doors, if given proper attention, beautifying everything that comes within reach of their curving and curling branchlets or the delicate touch of their clasping tendrils.

Among the best garden vines should be named the old-fashioned Morning Glory—*Ipomœa purpurea*. Its three primal colors—red, blue and white—have of late years been intensified and varied in almost numberless shades and combinations of tints. A package of seeds, purchased at the florists', gives a splendid assortment of these various colorings. Nothing makes a handsomer screen for an unsightly building than a plenty of these vines left to run at their own free will. By assisting the first two feet of their growth they will take any symmetrical shape; train them with cords or bands. Pillars and pyramids of these flowers are elegant and effective ornaments for gardens or any grounds. Long poles having lines reaching from their summit to the base, and these lines fastened to pegs set in the ground, in greater or less proximity to the pole, according as a pillar or a pyramid is desired, form the design. A beautiful floral cross is made by erecting two poles, each twelve feet long, one foot apart, and crossing these at right angles, eight feet from the ground, by a bar one foot wide and six feet long (or by two poles one foot wide and six feet long) and training morning glories upon it. Around the base of these designs plant the seeds in two circles, one outside the other, two or three inches apart. Good garden soil, rather moist, will give luxuriant growth. A location that has little or no morning sun will be most favorable; in such a place the flowers remain open much longer, and the season of bloom will be extended later than if the plants are exposed to much or very powerful sunshine. For out-door growth, plant morning glories in May or June. For parlor vines, to bloom through the winter, plant them in boxes or pots early in October, that they may get well started upon a vigorous growth by the influence of the open air.

Phaseolus multiflorus, the Flowering Bean, with its racemes of elegant scarlet or pearl-white flowers, is a splendid vine. The dense foliage of this and the ipomœa renders them very desirable for screens. It needs the same care and training as the ipomœa, and the same designs are suitable for it; but, unlike that, it will bear full exposure to the sun. Cut the flowers just before they are ready to fall, then the vines will continue to bloom till the frost comes. This too is an annual; but it needs so much sun it does not thrive so well within doors as some other vines.

Tropœolum majus, the Garden Nasturtium, is a favorite flowering vine. This also has been greatly improved within a few years, and we have its gorgeous blossoms, from the faintest canary-yellow to the deepest maroon color, passing through all the gradations of orange and scarlet. A sandy soil gives the best flowers; if very rich, or too moist, there will be plenty of leaves with few and inferior flowers. The plants may be trained to a wall by means of strings, but they make a finer appearance rising in a pyramidal form about a stake—five or six feet is the proper height for such a stake. A small dead tree or a pile of brush affords excellent support for nasturtiums, and when the plants are in bloom are objects of great beauty—the brush may be made to take the form of a huge basket, vase, lyre or an animal. Soak the seeds in warm water till tender to the touch, then plant them by laying them on the soil and sifting sandy loam

upon them to the depth of an inch. Branches of these vines, taken in the autumn and set in pots of loose sandy soil, will become good window plants, growing and blooming all winter. The double tropæolum is frequently seen among parlor plants, but its blossom looks too much like a bunch of scarlet rags to be admired. A very lovely parlor vine is the perennial tropæolum, with its ivy-like foliage and small neat flowers. Nasturtiums (tropæolums) are most effective in large isolated groups; their colors and their peculiar style of foliage do not harmonize well with those of other plants. For this reason the blossoms when cut should be kept by themselves; a dish or a vase of nasturtiums only, in various tints, is much handsomer than a collection including several species of flowers. Their rich velvety petals are finely contrasted by delicate green ferns—carrot leaves, when ferns cannot be procured, are a very suitable accompaniment. Except that we associate ideas of the vegetable garden with the carrot leaf it would be extensively used as the foliage of cut flowers, and for other ornamental purposes; if called by its botanical name, *Daucus*, its graceful pinnatifid form of soft rich verdure would be in great request. Evelyn, the old writer on "Gardenage," tells us that the ladies of Queen Elizabeth's court used carrot leaves as plumes for decorating their hair.

The Sweet Pea, *Lathyrus odoratus*, must receive early attention; its blossoms of delicate beauty and delicious fragrance will be indispensable for summer bouquets. Next to rosebuds stand sweet-pea flowers among the best garden productions for nosegays or for personal adornment. Beside the old-fashioned varieties of pink and white, and lavender and purple, we have now scarlet, scarlet and white, the various shades of pink, and the purest white; an elegant hedge may be made of these by planting an assortment of seeds and training them, like common garden peas, against sticks or brush. By cutting the flowers as soon as they begin to fade—that the strength of the plants need not be expended in perfecting seed—the vines will grow to the height of six feet and blossom continually till late in the autumn. The sweet pea needs light rich soil; grows handsomely against a pillar or if trained to form a pyramid. Soak the seeds twenty-four hours in warm water, then plant them in the same manner as nasturtium seeds.

Quamoclit vulgaris, the Cypress Vine, is a beautiful plant, and its charming scarlet flowers, though so short-lived, added to its handsome foliage, make it very fine for screening and ornamenting a clumsy porch or dilapidated piazza. Some persons complain that the seeds of the cypress vine are a long time germinating, and sometimes never come up. These difficulties will be obviated by pouring scalding water upon the seeds and allowing them to remain immersed a day before planting. They need about the same covering of soil as sweet peas. Give them soft, rich mould in a sunny location, and train upon a trellis or along strings.

Maurandia Barclayana, with its long and slender vines of the most vivid green, hung with white, crimson or purple bells, is one of our handsomest vines. It is very lovely trained upon a trellis, but still more beautiful when suffered to droop from a balcony or to run riot over a portico or the eaves of some low building. It grows best in a sunny exposure in rich damp soil. Cuttings of these maurandias are easily rooted in the autumn for parlor vines, are excellent for basket growth, and two pots, each containing a thrifty plant, placed upon brackets at either side of a recessed window will completely embower it with luxuriant growth.

Adlumia, climbing fumitory, mountain fringe, must not be forgotten. This delicate vine, with its elegant light green foliage and pale pink flowers, should be in every garden. It needs a shady location and rich light soil. Being a perennial, it seldom blooms till the second year. Plant the seeds beside a lattice and help its slender tendrils in and out the interstices, and you will be well rewarded for your pains; before the summer is over the lattice will be like an exquisite living picture—a perfect fairy bower, from which sprays and festoons of its beautiful foliage sway in the breath of the lightest breeze.

Liquid Manure for Pot Plants.

THE beneficial results obtained from manure water, when judiciously applied to fruiting and flowering plants, have long been recognized by cultivators, and its use is now becoming more general. It is well known that the roots of plants are more healthy when growing in pure soil free from rank manure, and these roots will draw up more healthy nourishment to the plants from manure given in a liquid state, than when they are encased in rank material which they cannot consume. We know that our most successful grape-growers use very little solid manure in the soil, only a few bones or bone meal, or similar material, which cannot give off more stimulant than the plants can consume, and also remains much longer in the soil as a fertilizer than manure, which dissolves rapidly.

The successful florist has more faith in giving simulants when the plant really needs them than in keeping the roots buried in soil made rich and almost offensive by strong manure. When roots are few and the plants almost at rest, the purer the soil and the less stimulant the plants receive, the better will they thrive when their roots come to draw up larger supplies of nourishment. Moisture is needed to soften the soil and to allow the roots to extract nourishment from it; but when all the virtue is out of the earth, and the plants begin to show signs of distress, all the watering in the world will not give vigor to the exhausted functions; but let a portion of guano or any well-prepared manure be mixed with the water sufficient to color it, and let this be repeated at every watering instead of giving a much stronger dose at longer intervals, the result will be most satisfactory. I have tried a number of experiments this season with liquid manure, and all lead me to have faith in the application of it, at every watering, in a weakly state.

A number of old fuchsias were stunted and pot-bound, but pressure of more important matters prevented our potting them into fresh earth; but to each watering a coloring of guano was allowed, and the plants with their pot-bound roots have not only made vigorous growth, but flowered freely from June onward till November. Some Pelargoniums, which were cut down last season and allowed to break in the usual way, were shaken out of the pots and placed in smaller ones, but, when they should have been shifted, they were allowed to remain in the small pots, which were crammed with roots; guano-water was given at all times when they required moisture; the plants grew and made fine foliage, and flowered better than others which were favored with larger pots and fresh soil. Many other examples I could give to prove that giving liquid manure frequently, and not until roots are in abundance to consume it, is the proper way to deal with this important assistant to cultivation.—*Florist.*

Room Decoration.—There has stood on the table of a room in my house, for thirteen months without a break (says a writer in the *Gardener's Magazine*), a nice young plant of Corypha australis, and in the course of that time it has not lost a frond, but has made six new ones that are as healthy and well developed as any one could wish. The room which this palm adorns is not particularly well lighted, and the light comes from one side only; yet the plant is as symmetrical as if it had never been out of a first-class plant-house. The room is sometimes cold and sometimes warm, and is occasionally well filled with tobacco smoke. But these varying conditions make no difference; the plant persists in thriving, and illustrates in a most pleasing manner the adaptability of this class of plants to domestic purposes.

Phylloxera.—A plan of destroying the Phylloxera (according to the *Revue Horticole*) has been devised by M. Denis, of Lyons. In the winter, when there are no herbaceous growths, the base of the vine stem is laid bare to a depth of 10 in. to 12 in., and boiling water, mixed with a small proportion of tobacco-juice, poured into the hole round the stock. Farmyard manure, or by preference sheep-dung, is then added, and the soil returned to its place.

Editor's Portfolio.

The Central Park Commissioners.

Some of the recent acts of the Commissioners of our famous Central Park are attracting great attention, and subjecting them to very severe criticism.

At a late meeting of the Board, the office of Landscape Gardener was abruptly discontinued, and a determination evinced to stop the management of all the Greenhouse Conservatories and sell the entire collection of plants.

Immediately after Prof. Demcker's discharge (which the Board said was on the ground of economy) three new gardeners were appointed at twice Mr. D.'s salary—for what? Think of it—to demolish work already done.

A beautiful little forest of one hundred acres had been laid out in the upper part of the park, designed to shelter the other parts of the park from cold north-west winds, and also to help in providing a necessary degree of moisture for the vegetation of the park. The idea was a splendid one; the forest, carefully planted, had been taken care of for several years, and was growing thriftily; trees were of all sizes from 2 to 6, 8, 10 and 12 inches in diameter. The *first work of these new gardeners was to begin to cut these trees all down.* A more monstrous error in Park management never was heard of. The very thing that for five years over five thousand journals in the United States had been encouraging, viz: *more tree culture*, this Board blindly ignored and rushed recklessly to the work of tree destruction for no assignable reason.

Another scene occurred a short time ago at one of their meetings which will make them remembered for years, with laughter, by every botanist in the United States. They instructed the *Head Landscape Gardener* to prepare a complete list of all the trees, shrubs and plants in the Park. He did so. Although it required him six weeks time and two assistants, the Board thought he could do it in a few hours. This list—a very large one, certainly—of the proper botanical and scientific name of every plant was submitted to the Board. After considering it a little while, they replied: "Why, here; this is not what we want; we want only the *common names such as the people know.*" The gardener replied: "Those I can't give you—I do not know them all; besides, many trees do not have any common names." "Why, yes; here you have *Acer;* what does this mean?" Answer: "Maple." "But why don't you name them Sugar Maple, etc.?" "Well," said the gardener, "I might give a few common names, but there are twenty sorts of maple which have no common name only that given properly by science."

As the Board could not understand why botanical names could not be translated, and from it a "common name" made up and given to it, they refused to accept the Gardener's list. As a curiosity, the gardener wrote to six florists of reputation, requesting them to give him the "common name" of a certain plant (he giving the true botanical term). From the six parties over *nine different local* "*common names*" were received for the same plant. The gardener desired to submit this to the intelligence of the Board, to convince them of the impossibility of using or inventing "common names" for everything, but he was advised not to do so—"*they would not like it.*"

The Board fosters architectural decorations, and permits expenditures for any fancy they, the architect and his friends, advise. Some say that the buildings drag along, and cost three times as much as they need to, so that the architect may make a nice thing of it in the way of five per cent. commission. We do not wish to assume the responsibility of such insinuations, but when we see the Board unwise in the management of its gardening and landscape departments, it is probable it will be criticised in all other points—sometimes with perfect justice.

During the past eight years there has never been appointed on this Board a single man who exhibited genuine love, interest or care for "good gardening." It has been filled with

politicians and business men. No invitation to join this Board has ever been extended to any Horticulturist in or near New York, nor have we ever known any one connected with the Board know enough to tell how to take up or transplant or prune a tree, or tell the difference between a Deutzia and a Spiræa. Probably four out of five Park Commissioners do not know anything of the beauties of the Erianthus Ravenna, or the Cannas; the beautiful Weeping Elm or Purple Beach have no charm for them—and a glorious display of flowers to delight the eyes of children and admiring ladies, would be a prodigal waste, although the gardener can produce them at little expense.

As a beautiful example of the light which illumines the financial wisdom of the Board, we may mention that by permission of the Board an order was given for the purchase of three thousand street trees, diameter 3 to 4 inches, price 75 cents each. The landscape gardener said they could not be bought for that; the Board thought they could, and so advertised in the *daily papers* (not the garden journals). They never received any proposals. The landscape gardener wrote to twelve nurserymen, and in no case could they be obtained for less than $3. The Board did not know the difference between a tree of 1 inch and one of 4 inches. How should they when they do not know one tree from another?

When will our city ever be ruled by "Commissioners" who know their duties well? When will the Mayor ever appoint Commissioners who can think more sensibly of parks and their needs than of politics and favorites?

Death of Paschall Morris.

We learn with regret of the death of Paschall Morris, editor of *The Practical Farmer*, Philadelphia. He was closely interested in dairy, stock and poultry matters, and succeeded in maintaining a lively and practical interest, in his journal, regarding these topics. As the only agricultural journal of Philadelphia, it was highly esteemed.

Eucalyptus Again.

It is absolutely useless for inhabitants of the United States east of the Rocky Mountains or north of Georgia, to attempt culture of the Eucalyptus, but in any climate where the temperature does not fall to or below 32°, Fahrenheit, there its dissemination will be a public benefit.

M. Gimbert, who has been long engaged in collecting evidence concerning the Autralian tree *Eucalyptus globulus*, the growth of which is surprisingly rapid, attaining, besides gigantic dimensions, has addressed an interesting communication to the London Academy of Science. This plant has the singular property of absorbing ten times its weight of water from the soil, and of emitting antiseptic camphorous effluvia. When sown in marshy ground it will dry up in a very short time. The English were the first to try it at the Cape, and within two or three years they completely changed the climatic condition of the unhealthy parts of the colony. A few years later its plantation was undertaken on a large scale in various parts of Algeria. At Pardock, twenty miles from Algiers, a farm situated on the banks of the Hamyze was noted for its extremely pestilential air. In the spring of 1867 about 13,000 of the eucalyptus were planted there. In July of the same year—the time when the fever season used to set in—not a single case occurred; yet the trees were not more than nine feet high. Since then complete immunity from fever has been maintained. In the neighborhood of Constantine the farm of Ben Machydlin was equally in bad repute. It was covered with marshes both in winter and summer. In five years the whole ground was dried up by 14,000 of these trees, and farmers and children enjoy excellent health. At the factory of the Glue de Constantine, in three years a plantation of eucalyptus has transformed twelve acres of marshy soil into a magnificent park, whence fever has completely disappeared. In the Island of Cuba this and all other paludal diseases are fast disappearing from all the unhealthy districts where this tree has been introduced. A station-house at one of the ends of a railway viaduct in the department of the Var was so pestilential that the officials could not be kept there longer than a year. Forty of these trees were planted, and it is now as healthy as any other place on the line.

Tree Planting Extraordinary.

The *Pacific Rural* mentions the fact that Mr. G. T. Stratton, of Brooklyn, has sold, besides other orders, 60,000 Eucalyptus trees this season to two individuals. G. P. Jones will transplant 35,000 on his land north-west of Berkley, and E. C. Sessions, 25,000 on the low hills back of Brooklyn—all in Alameda county.

A New Fashion.

Practically, Americans do not want to hear or know anything of Fungus. It is too disagreeable a subject; but the study of it is absolutely imperative, if we wish to guard our trees and plants against destroying agencies, which are mysterious, yet deadly to life in the "Poison Valley." An English paper, in speaking of this Fungus fashion in England, says:

"The first Fungus Exhibition held in Scotland was opened in Aberdeen on the 18th instant. The idea of the exhibition was first suggested by the Rev. Mr. Ferguson, of New Pitsligo, in the "Scottish Naturalist" for April. The suggestion was readily taken up by fungologists and men of science, and the result was an exhibition which gentlemen entitled to speak with authority say was never equalled in this country. The specimens numbered about seven thousand. Almost every county in Scotland made large contributions, while England and Wales sent a number of exhibits. In fact, almost every fungologist in Britain contributed specimens. A considerable proportion of the Fungi belonged to the larger classes, such as Agarici, Boleti, Polypori, etc.; but there were also large collections of microscopic Fungi, and very important additions to the British flora. Several species of Fungi new to science were exhibited, and some splendid specimens of Sparassis, which is very rare, were to be seen. Several fine specimens of Fistulina hepatica, Polyporus sulphureus and Phlebia radiata were much admired. There was a specimen of Helvella gigas, from Heathcot, near Aberdeen, a species only once before known to have been found in Britain. Among the edible Fungi was an enormous specimen of Lycoperdon giganteum, which had been gathered at Fetternear, in the north of Scotland, numerous specimens of Cantharellus cibarius and Boletus edulis. Several specimens of fossil Fungi, which are very rarely found, were exhibited. An excellent collection, gathered on Moncreiff Hill, and sent by Sir Thomas Moncreiff, included a fine specimen of Sparassis crispa. Another prominent specimen of the same was included in a valuable collection from Huntly Lodge."

Fruit Culture in Michigan.

The enormous extent to which fruit culture in Michigan has reached, may be inferred from the following statistics, collected from official sources the past year:

AREA PLANTED TO FRUIT.

Acres of Orcharding	237,061.00
" Vineyards	1,007.64
" Raspberry bushes	946.52
" Strawberry vines	1,647.32
" Currant and Gooseberry bushes	386.37
Total acres of fruit	241,048.85

FRUIT PRODUCT FOR TWO YEARS.

	1872.	1873.
Apples, bushels	7,236,471	5,927,875
Peaches, "	318,454	22,031
Pears, "	33,932	40,857
Plums, "	6,301	3,667
Cherries, "	60,958	66,746
Strawb'ries, "	50,420	48,922
Currrants and Gooseberries, bus'ls	36,484	40,562
Totals, bushels	7,743,020	6,150,660
Pounds of Grapes	2,323,500	2,960,100

Floriculture in South America.

A correspondent of the *Cleveland Herald* thus writes of scenes of tropical splendor, and the public encouragement of gardening at Lima, Peru. In referring to the beautiful Alameda, long avenues lined with Palm trees and otherwise highly ornamented, he says: It is not an exaggeration to say that if the contents of a hundred thousand greenhouses and hot-houses were promiscuously scattered over a large plain, the effect would scarcely approach the appearance of these grounds. Upon entering them, long avenues of the umbrella tree greet the eye, their broad leaves so closely folded over each other that no beam of light can penetrate; the shadowy beauty heightened by a chaste arrangement of large vases between the trees, filled with rare plants of every description. Weeping willows, with their delicate drapery, sweep the edge of little lakes, whose swans and variegated water-birds drift around lazily. Banana trees, with clusters of fruit, in every stage of lusciousness, are

seen, here and there, amid the stately palms, while the large family of the palm (seen in every direction, with their great variety of foliage, including the graceful palmetto, filling in with the undergrowth) make a fine study for the botanist. Orange and magnolia trees, reflecting the light with their polished leaves like mirrors, add wondrous brilliancy to the thickly interwoven foliage of other trees. Around one frame, the Wistaria, with its clusters of many-shaded purple blossoms, is thrown, and around another twines a vine, with leaves and blossoms a blood-red, producing the exquisite effect of autumnal effects in mid-summer. We lifted up the low hanging branches, and passed into a small arbor formed of low shrubs and the intertwined, overhanging branches of trees. The air around us was heavy with the fragrance of yellow Jasmine, the pure cape Jasmine, and the mingled perfume of queenly-looking roses, roses softly tinted, roses in bud, half-opened and full bloom, that were hung in Nature's own graceful way among the bushes, and on vines that crept around and far up into the branches of trees. As we walked along, myriads of flowers that we knew not appealed to our hearts, through their rare loveliness. A very trysting place it seemed, for all in the floral kingdom, where the heavens above and the earth beneath unite to bring to the highest state of perfection these specialties of God's handiwork. The Chinese coolies were working around the beds, transplanting, pruning and training, with their world-renowned skill, the reckless growth of nature. We wound around, as in a labyrinth, coming upon few places where a fair perspective could be obtained—indeed, we were closed in on every side by an almost impenetrable forest of buds and blossoms. Statuary we met everywhere, white-robed spirits, as it were, in the voluptuous world around them. A large lake, with small pleasure boats moving over the quiet water, was an absolute relief to the eye. Little irrigation streams, walled in on three sides by stone, cross and re-cross each other, and by their swift motion a murmuring song was softly echoed through the air. A large arbor, entered through a rustic gate, incloses a pond, which we found covered with lily plants, the ripples of the wind just disturbing a little their waxen beauty. In our northern gardens only a few months in the year does nature court us with her beauty, but here, during *every* month in the year, an exquisite army of flowers is marching in unbroken procession through this fairy land, noiselessly disturbing the inflorescence of different buds and blossoms. The waxen-like Camellias, from pure white, blushing deeper and deeper through all the shades of pink, into vivid scarlet, variegated, and banded with white, form a haughty family of beauties. In turn come the shy little Anemone, in love with the spirit of the wind; the Quaker-like Mignonette (darling among flowers), scattering its fragrance around so subtly one knows not "whence it cometh, nor whither it goeth;" the Heliotrope and Tuberose intoxicating the very air with their perfume; Geraniums, delicately scented, and flush with coloring; Pinks, single and double, and re-double in their full perfection; Salvias, drooping their flame-like blooms among rich leaves; Oleanders, Pansies, Lilies and a host of other plants, some with the soul of fragrance, others with mere passion-beauty; some, pure and pale and cold in distinguished loveliness, and woven among them all, the infinite variety of foliage plants, striped with russet-brown, veined with blood-red, silvered over with downy fuzz, large plants and small, making a woof of gaudy appearance.

Wild Flowers and Insects—Curiosities of Floriculture and Rural Life.

In the recent scientific convention at Belfast, the lecture of Sir John Lubbock, on the relations of insects to wild flowers was received with great applause, and considered a great achievement.

The lecturer made an elaborate exposition of the services rendered to flowers by insects, and the numerous processes of fertilization and propagation thus effected were minutely explained. A correspondent of *The Tribune*, in dissecting the lecture, said: "I have rarely seen an audience so much absorbed in any scientific discourse, whatever. A friend of his, by whose side I had been sitting at dinner,

told me a fact which I may take the liberty to repeat as a most striking example of exact observation, and of that talent for minute attention which lies at the root of so much scientific capacity. He spent hours at a time, she said, and days in succession, watching the coming and going of bees among the flowers. The problem that he was bent on solving depended on the movements of individual bees, and he came at last to identify the individual bees, to distinguish between the flight and return of one and another, and so to determine, among other things, what degree of information they communicated to each other respecting their journeys and their acquaintance with particular flowers. That the bees were marked is possible, but the anecdote, taken in connection with the results shown by the lecture, is scarcely less wonderful. The young lady who related this had herself shared in the investigation, which, again, did not make it less wonderful. I select a single passage for quotation, which will show the style and method of the lecturer.

"One other peculiarity of flowers is explained if we take this view of the relations of insects to flowers. Many flowers close their petals during rain, which is obviously an advantage, since it prevents the honey and pollen from being spoiled or washed away. Everybody, however, has observed that even in fine weather certain flowers close at particular hours. This habit of going to sleep is surely very curious. Why should flowers do so? In animals we can understand it; they are tired, and require rest. But why should flowers sleep? Why should some flowers do so and not others? Moreover, different flowers keep different hours. The Daisy opens at sunrise, and closes at sunset, whence its name, day's eye. The Dandelion (Leonted or Taraxacum) opens at 7, and closes at 5; Arenani inbra is open from 9 to 3; Nymphea alba from about 7 to 4; the common mouse-ear Hawk-weed is said to wake at 8, and go to sleep at 2; the scarlet Pimpernel (Anagallis arvensis) to wake at 7, and close soon after 2; while Trogopogon pratensis opens at 4 in the morning, and closes ust before 12, whence its English name, 'John go to bed at noon.' Farmers' boys in some parts are said to regulate their dinner by it. Other flowers, on the contrary, open in the evening. Now, it is obvious that flowers which are fertilized by night-flying insects would derive no advantage from being open by day, and, on the other hand, that those which are fertilized by bees would gain nothing by being open at night; nay, it would be a distinct disadvantage, because it would render them liable to be robbed of their honey and pollen by insects which are not capable of fertilizing them. I believe, then, that the closing of flowers has reference to the habits of insects, and it may be observed, also, in support of this, that wind-fertilized flowers never sleep, and that some of those flowers which attract insects by smell emit their scent at particular hours; thus Hespien matronalis and Cychins vespertina smells in the evening, and Orchis bifolia is particularly sweet at night."

Death of S. R. Wells.

The death of S. R. Wells, which occurred on Monday, April 12th, of typhoid fever, will be heard with regret by many who have known him personally, and have met him as friends or acquaintances in the frequent excursions to the West, which he joined. He had built up a large and flourishing business in books and publications relating to health, mental science, and physiological subjects. And we are glad to say every publication bore the impress of a high moral character, and a really useful endeavor to help others to make themselves men and women of useful lives. He was an orthodox Christian, ardently devoted to temperance, and a ready patron of agriculture, horticulture, and art.

Special Prizes for Essays.

The Massachusetts Horticultural Society offer four prizes for the best essays on Horticultural Topics, and give the benefit of the competition to all persons, whether members of the society or not. The prizes are as follows:

For the best essay upon the Culture and Varieties of Roses; to be read during the Rose Exhibition, Thursday, June 17, $25.

For the best essay upon Grape Culture in gardens and on buildings, with a list of varie-

ties best adapted to such purposes; the essay to be read on Saturday, October 9, $25.

For the best essay upon the Culture of the Cauliflower and other vegetables of the Cabbage family (*Brassica oleracea*); the essay to be read on Saturday, November 6, $25.

For the best essay upon the principles of Landscape Gardening as applied to small suburban estates; the essay to be read on Saturday, November 27, $25.

The essay upon Rose Culture must be submitted by the first Saturday in June; all others at least one month before the day for the reading of the essays.

Essays should be addressed to the Committee on Publication, Horticultural Hall, Boston, Mass.

American Pomological Society.

We are unable to give, in our reading pages, sufficient space to all the announcements of the American Pomological Society, and our readers will find them in the first few advertising pages adjoining. We notice considerable discussion at the early date fixed for the meeting at Chicago. Most of the western people prefer it should be a week or so later, since the fruits to be exhibited would be in greater plenty, and more visitors would come to the city. We judge the suggestion of a date a little later, is quite advisable, and the society will have a more successful meeting to do as the western members recommend.

W. C. Flagg, the new secretary, is waking up the western horticulturists, and anticipates a very successful session.

Rose Catalogues.

The catalogues of roses and plants, sent us by Miller & Hayes, are dainty indeed. Dressed in most beautiful paper and printing, they equal in taste even the charms of the lovely floral gems they describe within. We know of no rose catalogue in America superior to theirs.

Root's Garden Manual.

J. B. Root, of Rockford, Ill., has issued a very practical and entertaining manual, on the culture of garden vegetables. It contains twenty pages or more of short, pithy notes on garden crops, and as far as we judge from Mr. Root's reputation is exceedingly reliable.

New Plants.

R. Buist, Sr., of Philadelphia, forwards to us his catalogue of new plants, in which are so many desirable things we cannot possibly enumerate even the best. We notice that Mr. Buist expects to retire from his business in 1876, and all his valuable collections will soon be offered to the public.

Plate of Roses.

The plate of roses, issued this spring, by Peter Henderson, has been very generally admired. The colors are very soft, and the printing has been very well done. It would be difficult to say which, of all the varieties, were prettiest. Such beauties as Madame Margotten and Marie Sisley, need no critics.

A Charming Fruit Farm.

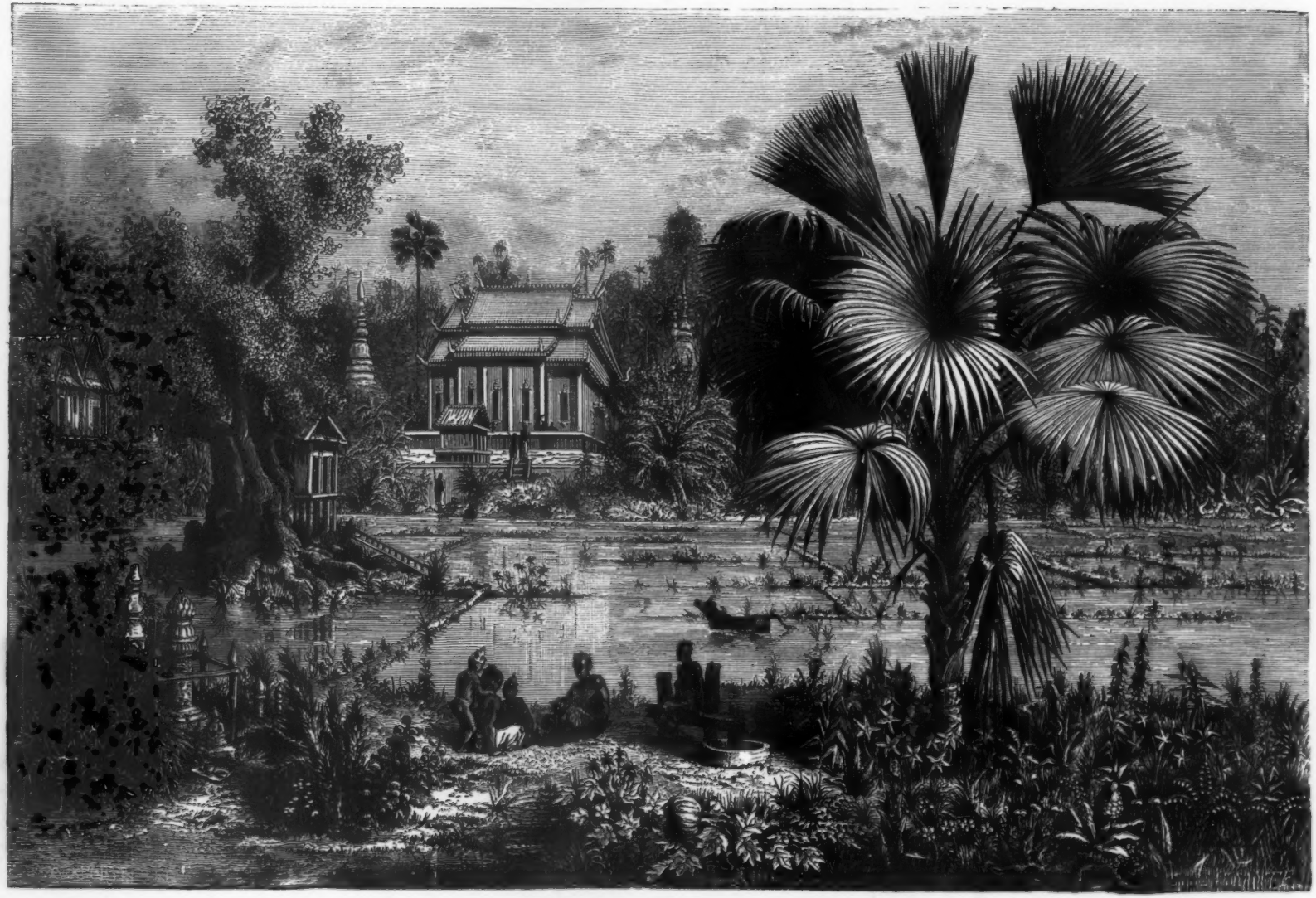
N. Ohmer, of Dayton O., sends us a lithographic sketch of his well known fruit farm. It is really a beautiful sight, and tempts us to go there for a long visit. His place is very systematically laid out; and being already so well grown and developed, the trees make groves of dense regularity. Upon his place are 2 acres grapes, 2,125 pear trees, 1,364 apple trees, 300 quince trees, 1,244 peach trees, 1,500 dwarf pear trees, with a large space by acres devoted to small fruits.

Proceedings Montgomery County Hort. Society.

The proceedings of this society, for year 1874, are sent us in pamphlet form. The society seems always to have a good time; good dinners, good addresses, and the discussions are very enjoyable.

Grape Catalogues and Manual.

Bush & Son & Meissner, of Bushberg, Mo., have issued a grape manual, which, as far as we have knowledge, is the very best of any dealer in the country; contains over eighty pages, descriptive of the principal varieties and culture, with such hints upon vine management, and diseases, as will make it of great value to every one who owns a grape vine. The directions, however, are principally adapted to the western country, in the valley of the Mississippi.



SCENE IN A BUDDHIST GARDEN.

UofM